

**BOOK OF UTILITY,**

CONTAINING

**Useful Information**

CONCERNING

MORAL, INTELLECTUAL, AND PHYSICAL  
CONDITION OF MAN.

AND

**NOTABLE THINGS**

IN THE

ARTS, SCIENCES, AND HISTORY.

ARRANGED IN SUCH A MANNER

AS TO DIRECT THE ATTENTION OF YOUTH

TO THE MOST

USEFUL, UTILITY, AND IMPORTANT

—

BY

**THOMAS TEGG**

Author of "The Moral and Physical Education of Youth."

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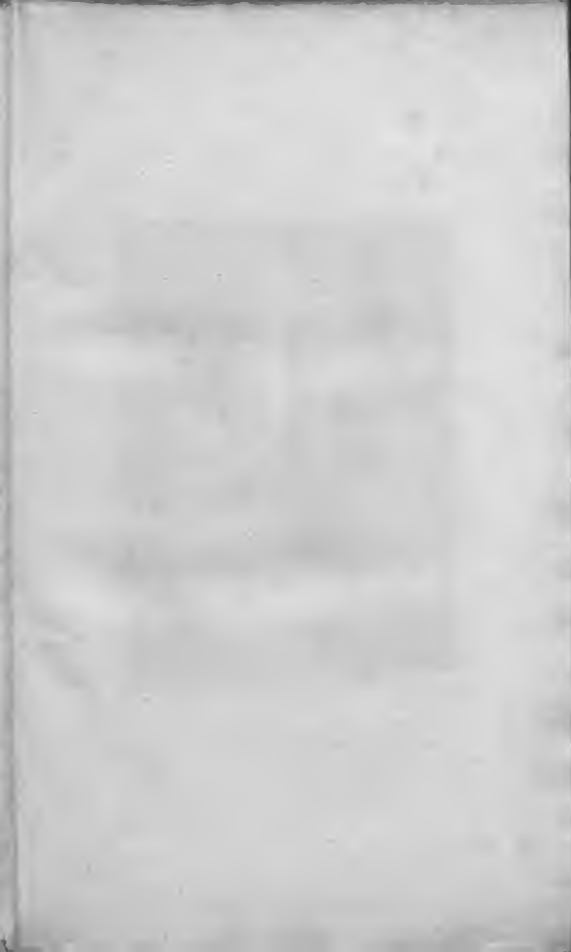






THE  
BOOK OF UTILITY.







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# BOOK OF UTILITY,

OR, REPOSITORY OF

## Useful Information

CONNECTED WITH THE

MORAL, INTELLECTUAL, AND PHYSICAL  
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## NOTABLE THINGS

IN THE

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PARTICULARLY CALCULATED

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TO SUBJECTS OF

*REAL UTILITY AND IMPORTANCE.*

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COLLECTED AND ARRANGED

BY THOMAS TEGG,

EDITOR OF THE YOUNG MAN'S BOOK OF KNOWLEDGE, &c.

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1822.

# THE HISTORY OF THE

REPUBLIC OF THE UNITED STATES

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## P R E F A C E.

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AMID the various improvements of which the last half century has been distinguished, from none, it is presumed, has this country derived more honour, or more benefit, than from those which have been necessarily introduced into the national education. Those who can recollect the state of things, in the early part of this period, well remember, that whilst classical learning was exclusively pursued in Grammar and Foundation Schools, there existed but few seminaries adapted to the circumstances and the wants of the middle ranks of life ; in which the studies of Professional and Commercial Education might be so judiciously blended as to impart to the young the advantages

of both. The rapid increase of wealth, by which the inferior ranks of life gradually approximated to those above them—and by which the pride of birth was silently yielding to the influence of commercial respectability—not only imparted the ability, but awakened the desire in the commercial world of such a system of Education as should be suited to the new order of things, by which youth might not only be qualified for the purposes of the counting-house, but also to appear with confidence, credit, and respectability, in that higher order of society which the influence of honourable and prosperous business had opened to his ambition. This change, although principally apparent, was far from being exclusively confined to the higher descriptions of mercantile life. The humble tradesman, aiming at similar elevation, quickly emulated his more wealthy neighbours, and sought to follow in the same road of improvement.—Hence judicious masters perceived that a very material change must take place in their system of Education, in order fully to meet the new wants and wishes of the public. To the impulse thus

given, we stand indebted for that great variety of useful and valuable Publications with which the world has of late years been favoured ; insomuch, that ignorance is now not only a misfortune but a crime.

Although it is readily granted that elementary Education has advanced in improvement very nearly in proportion to the march of public opinion, yet it must be remembered, that the youthful mind and capacity are limited ; and that the indispensable studies now required to constitute a good Education are so various, that but little time can be devoted to the acquisition of that miscellaneous information so necessary to a man of the world, and so essential in the present improved state of society.—At school the faculties are cultivated, enlarged, and improved : the mind is prepared for the consideration and due discrimination in accepting or rejecting the information submitted to it—Scholastic Education is the bringing the soil into a state capable of receiving and nourishing, and propagating the

seed sown. School studies, under the best masters, are but the foundation on which every person must hereafter construct his own education. A more fatal error, or a greater hindrance to all real improvement, cannot be, than the too general notion that Education is completed when the pupil leaves school: whereas the truth is far otherwise; for in reality it is only then begun. Happy is the person to whom sufficiency of leisure is afforded to prosecute the good work, and in the cultivation of his own mind to complete that solid and general system of Education, of which the principles and foundation were laid at school. To how few, however, are such leisure and such opportunities given. The termination of their school days introduces most persons into the engagements and active duties of life, when but little leisure, and frequently less of inclination for such studies accompany them. The toils of business leave the mind unfitted for close application and severe study: and indeed it would be unreasonable to require much of mental energy or exertion under such circumstances. Yet, if we are not allowed to

expect great things, we may reasonably anticipate that the slow but gradual and steady accumulations of knowledge will ultimately prove worthy of our notice and regard. Our youth are not all destined to fill the chair of the Professor, or to shine in the annals of Philosophy—variety rather than depth, miscellaneous rather than exclusive information, suit the middle ranks of life. To them, therefore, the *BOOK OF UTILITY* is recommended; for their use especially it has been prepared. There are few subjects on which information is commonly desired which do not find a place in these pages. The volume is divided into three parts. The First containing much useful Miscellaneous Information: the Second, General Rules for the Restoration and Preservation of Health: whilst the Third treats of the Useful Arts, Domestic Economy, &c. On each subject the information, though compressed, is accurate; and it may be affirmed, that there are but few individuals who may not find a reference to these pages both useful and expedient. To families, it is presumed, this volume will be found singularly

advantageous, as the information which it affords will often supersede the necessity of application to others, by which not only will much expence be saved, but delay otherwise unavoidable frequently prevented.

UTILITY, as the title indicates, has been the Editor's aim, literary credit could not be sought :— if, therefore, the work should supply that variety of information, and excite in the minds of young persons a desire to prosecute with greater zeal and with increased application, the study of the various subjects on which it treats, the Editor will feel that he has contributed something to the stock of human knowledge and happiness.

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# BOOK OF UTILITY.

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## PART I.

CONTAINING

USEFUL MISCELLANEOUS INFORMATION.

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### ON MAN.

MAN, the chief of the animated world, is distinguished from all living creatures by his superior faculties; being possessed of reflection, thought, a power of invention, and an ability of carrying his conceptions or designs into effect. Formed for society, he seldom lives in solitude: and as an emanation of divine light appears to direct all the *good* actions of mankind, we excel every created being, while we enjoy the exclusive faculty of communicating our ideas, by speech as well as by letters.

As an animal, man also is strikingly distinguishable from the rest of the creatures of the earth, on account of the ingenuity with which he employs the productions of nature for his accommodation.

All animals are disposed to make *use* of these productions; but man, in a measure, *creates* them. The brute seeks shelter from the tempest; but man forms it for himself. Man is also distinguishable by the originality of his ideas. *Instincts* make up a part of his character; but he is principally the creature of experience and reflection: he builds a habitation, because he has *experienced* the inclemency of the weather, and because he has *reflected* upon the means of securing himself against its rage.

Men are divided into classes, chiefly by their colour,

that varies according to the situation of the country in which they reside.

Dr. Hunter has given the following view of the different complexions observable among mankind :

<i>Black.</i>	Africans under the line, Inhabitants of New Guinea, Inhabitants of New Holland.
<i>Swarthy.</i>	Moors in the North of Africa, Hottentots in the South of Africa.
<i>Copper-coloured.</i>	East Indians.
<i>Red-coloured.</i>	Americans.
<i>Brown-coloured.</i>	Tartars, Persians, Arabs, Africans on the coast of the Mediterranean, Chinese.
<i>Brownish.</i>	<i>Inhabitants of the South of Europe,</i> Sicilians, <i>Abyssinians,</i> Spaniards, Turks ; <i>and likewise</i> Samoides <i>and</i> Laplanders.
<i>White.</i>	<i>Most of the European nations ; as</i> Swedes, Danes, Britons, Germans, Poles, &c. Kabardinski, Georgians, Inhabitants of the Islands of the Pacific Ocean.

This variation of the human complexion has been placed in a very satisfactory point of view by Mr. Clarkson. The old anatomists usually divided the skin into two parts, or *laminae* : the exterior and thinnest, called by the Greeks *epidermis*, by the Romans *cuticula*, and hence by the English *cuticle* ; and the

interior, called by the first *derma*, by the second *cutis*, and by the third *true-skin*. From this state of anatomical knowledge, they must have been led to conclude, that, as the true or interior skin is the same in all human subjects, the seat of colour was the cuticle or upper surface. Malpighi was the first who discovered that the skin is, in reality, divided into three laminæ; the cuticle, the true-skin, and a coagulated substance situated between both, which he distinguished by the name of *rete-mucosum*. It afterward appeared that the cuticle or exterior skin, when divided from the third lamina, according to this discovery, was semi-transparent; that the cuticle of the blackest negro was of the same transparency and colour as that of the most perfect white; and hence, that the *rete-mucosum* is the seat of colour.

It is now universally known, that the children of negroes are born white. The change of complexion takes place as they advance in age. Whatever causes co-operate in producing that change, they produce it by acting on the *rete-mucosum*, which, from the manner in which the cuticle is perforated, is as accessible as the cuticle itself. These causes are, probably, those qualities of things, which, combined with the influence of the sun, contribute to form what we call climate. The regular variation of the colour of this substance, according to the situation of countries, has been clearly ascertained in the numerous anatomical experiments that have been made. The natives of many of the isles and kingdoms of Asia are found to have their *rete-mucosum* black; those of Africa, situated near the line, of the same colour; those of the maritime parts of the same continent, of a brown nearly approaching to the former; and the colour becomes lighter or darker in proportion as the distance from the equator is either greater or less. The Europeans are the fairest inhabitants of the world. Those residing in the most southern regions of that quarter of the globe, have in their *rete-mucosum* a tinge of the dark hue of their African neighbours; whence the epidemic complexion prevalent among

them is nearly of the colour of the pickled Spanish olive; while in Britain, and countries still nearer to the pole, it appears to be almost, if not absolutely, white.

To describe the various parts of the human frame, is the province of anatomists; and, as it would be foreign to our plan to discuss the social, moral, religious, and political relations of man, we trust the present brief sketch will suffice. Let it, however, be observed, that the generality of mankind have no reason to complain of the shortness of their existence; for, as they receive, at their birth, the germ of a long life, it must be attributed partly to their own neglect, partly to the concurrence of accidental and extraneous causes, which they cannot prevent or foresee, that they do not attain such an age as their natural constitutions may seem to promise.

Longevity, however, has always been highly estimated by man; hence the art of preserving life has become an important study, and ought to form part of the education of every individual.—There is, however, a period at which mankind cease to grow; and beyond which our existence continues for a limited time. Thus, if a person attain his full growth at the age of fifteen, he generally dies at that of sixty; provided that no accidents intervene, by which the vital principal be affected, and prematurely extinguished. According to the calculations of others, every animal body is by Nature destined to live *eight* times the length of its growth.

From the most accurate political accounts, made by comparing the bills of mortality published in different countries and climates, we shall insert the following result:—Of 1000 persons living in large cities, no less than 35 or 36 die annually; while, in country places, or small towns, only from 28 to 30 deaths happen in a similar period. Among 1000 children, five die during parturition; and scarcely half that number in child-bed; but about 300 are computed to fall victims to a perverse mode of education, though suckled by their mothers; and not less than 500, or



one half of all that are born, if reared by wet-nurses. The mortality of infants, indeed, has increased to a most alarming degree in this luxurious age; as the plurality of them is carried off by convulsions, and difficult teething. Among 115 dead persons, there is only one woman deceased in child-bed; and, of 400 mothers, one only by previous pains.—A greater proportion of boys than of girls die of the natural small-pox.—There are always to be found more aged persons in hilly or mountainous countries, than in low situations; and it is proved, by the most authentic computation, that, of 3125, only one individual survives the hundredth year. From the same source, the following is the most probable chance which persons may have for the duration of their lives, after a certain fixed period, namely:

			<i>Years. Months.</i>	
A new-born infant will probably live			34	6
A person of 1 year old			41	9
3	-	-	45	7
5	-	-	46	4
10	-	-	44	9
15	-	-	41	6
20	-	-	38	3
25	-	-	35	3
30	-	-	32	3
35	-	-	29	8
40	-	-	26	6
45	-	-	23	0
50	-	-	20	11
55	-	-	17	0
60	-	-	14	2
65	-	-	11	5
70	-	-	8	11
75	-	-	6	8
80	-	-	4	10
85	-	-	3	3
90	-	-	2	0

The proportion of the female sex to that of males, with respect to the number of deceased, is as 100 to

108.—Previously to the 60th year, the chance of survivorship is in favour of women; but, after that age, men generally survive them.—Married women, on the whole, live longer than those in a state of celibacy. From observations made for the space of 50 years, it is evident, that most persons die in the months of March, August, and September; but the fewest in November, December, and February. In populous cities, however, such as London and Paris, death makes the greatest havoc during the *winter*.

One half of the human race is doomed to dissolution before they have completed the 17th year of their age; but, after this critical period, the survivors' chance of life becomes more valuable with every year: hence, for instance, a person thirty years old, according to the preceding calculation, will probably live thirty-two years longer; so that he may attain the age of sixty-two; whereas a youth of fifteen, though he have a chance of living forty-one and a half years longer, will nevertheless arrive only at the 56th or 57th year of his age.

Conformably to the observations of Boerhaave, the most healthy children are born in the months of January, February and March: indeed, the greatest number of births takes place during the two months last mentioned. The proportion of boys, annually born, is to that of girls as 104 to 100; but, on the other hand, a greater number of the former die during infancy than of the latter; so that, about the age of puberty, both sexes are nearly equal.—Among 65 or 70 infants, there is generally but one instance of *twins*. The number of marriages, compared to that of the whole population of a country, is as 175 to 1000. Four children are generally computed to arise from each married couple; but, in towns, only thirty-five children from ten families.—Lastly, it is proved from the records of the most experienced physicians, that, among 100 persons living in cities, throughout the year, only twenty are indisposed, or confined to their beds for one month; or twenty-four for the space of a fortnight.

With a view to prolong human life, Lord Bacon recommends the bath, after which unctions of salves and oils are to be applied, in order to exclude the influence of the external air. In his opinion, a cooling diet, opiates, or narcotics, are the best means of preventing the internal consumption of the body, and to renovate it, when such decay has commenced. In certain constitutions, these remedies may possibly be productive of some advantage; but it is an erroneous idea, that they will be universally beneficial: the whole of his project is more specious than practicable; and the basis on which his theory was apparently supported, has no real foundation.

The late illustrious Haller remarks, that some of the causes which contribute to protract life, beyond its usual period, are *external*. Such, for instance, is climate: hence, the more northern latitudes, or about 50 degrees, are the most proper for youth; because, in such a region, the circulation is less rapid, and acute diseases seldom occur. But, in a more advanced age, when the pulsations of the heart are faint or slow, and its irritability is diminished, a warmer region is more salutary; and he recommends aged persons to migrate 30 or 40 degrees, or even nearer to the equator, where they may enjoy, at pleasure, the genial warmth of the sun, or the cooling shade.

Among the *internal* causes of longevity, the rudiments of a sound body, descended from parents uncontaminated by hereditary disease, are to be considered as the principal: thus dropsy, gout, apoplexy, consumption, and the long train of disorders, that are too frequently transmitted from one generation to another, will in a great measure be prevented. With respect to the mode of living, Haller recommends abstemiousness during youth; the drink should be water, which Nature has provided for our common use; and he justly considers wine as a species of medicine. Animal food should be sparingly eaten, together with a large proportion of vegetables, and but a small addition of saline or aromatic substances. Temperance is, in every respect, an essential point; so that the

quantity eaten may be well digested and perfectly assimilated; that the blood may circulate regularly, and free from all corruption or infection, similar to that of an infant. Aged persons, however, may somewhat more freely indulge in the use of animal food: on the other hand, tranquillity, both of body and mind, is of the greatest consequence; as nothing is more detrimental than an irritable or irascible disposition. Hence, a due mixture of a lively and placid temperament, is a very desirable condition, so as to be neither insensible of pleasure, nor too much addicted to the gratification of sensual desires. Moderation is, therefore, here likewise a beneficial attribute; but, with regard to sleep, old and decrepit people may be more indulgent.

### BRITISH CONSTITUTION, &c.

Constitution, in politics, is defined to be a form or principle of government. Some difference of opinion is entertained concerning the respective advantages of written and unwritten constitutions: the first originating from events, and, frequently, never formally acknowledged; the second depending upon articles carefully drawn, and solemnly acceded to. On this subject, the observations of Mr. Adams, the late president of the United States, appear to be entitled to attention: 'A constitution,' says Mr. Paine, 'is not a thing in name only, but in fact. It has not an ideal, but a real existence; and wherever it cannot be produced in a visible form, there is none.' Mr. Paine should have gone farther, and told us, whether, like a deed, it must be written on paper or parchment, or whether it has a larger latitude, and may be engraved on stone, or carved in wood? From the tenour of his argument it should seem, that he had only the American constitutions in his mind; for, excepting them, I believe he would not find in all history a government which will come within his definition; and, of course, there never was a people that had a con-

stitution, previous to the year 1776. But the word, with an idea affixed to it, had been in use, and commonly understood, for centuries before that period, and therefore Mr. Paine must, to suit his purpose, alter its acceptations, and in the warmth of his zeal for revolutions, endeavour to bring about a revolution in language also. When all the most illustrious whig writers in England have contended for the liberty of their country upon the principles of the English constitution; when the glorious congress of 1774 declared, that 'the inhabitants of the English colonies in North America were entitled to certain rights by the immutable laws of nature, *the principles of the English constitution*, and the several charters or compacts,' they knew very well what they meant, and were perfectly understood by all mankind. Mr. Paine says, that 'a constitution is to a government, what the laws made afterward by that government are to a court of judicature;' but when the American states, by their constitution, expressly adopted *the whole body of the common law*, so far as it was applicable to their respective situations, did they adopt nothing at all, because that law cannot be produced in a visible form? No, the constitution of a country is not the paper or parchment upon which the compact is written; it is the system of fundamental laws, by which the people have consented to be governed, which is always supposed to be impressed upon the mind of every individual, and of which the written or printed copies are nothing more than the evidence."

Mr. Adams has farther illustrated this subject, in the following passage: "It is not absolutely essential to the existence of a constitution, that it should be producible 'in a visible form.' The period of time when the foundations of the present English Government were laid by the association of the people in 'their original character, cannot, indeed, be ascertained. Many of the laws which are in use to this day in Great Britain, and from thence have been adopted by the American republics, may be traced back to the remotest period of antiquity; and the

origin even of the institution of juries, an institution so congenial to the genuine spirit of freedom, is lost in the obscurity of the fabulous ages. Many of the fundamental principles of the English constitution are known to have existed long before the invention of printing, and even before the inhabitants of Britain were acquainted with the use of letters, and it would therefore be an absurdity to require that the original articles should be produced 'in a visible form.' But *ex nihilo, nihil fit*; the very existence of these principles proves the formation of a social compact previous to that existence; and the spirit of liberty, which is their distinguishing characteristic, affords internal evidence that they did not originate in the merciless despotism of a conqueror, but in the free and unrestrained consent of a manly and generous people. It will not be said that an original compact was never formed, because it is not recorded in the page of history:—as well might it be pretended, that the pyramids of Egypt arose self-created from the earth, because the time of their erection and the names of their builders have been consigned to dark oblivion, in which all human labours are destined to be overwhelmed.

"In this sense, the British nation have a constitution, which was, for many years, the admiration of the world. It is composed of a venerable *system* of unwritten or customary laws, handed down from time immemorial, and sanctioned by the accumulated experience of ages; and of a body of statutes enacted by an authority lawfully competent to that purpose. Mr. Paine is certainly mistaken, when he considers the British government as having originated in the conquest of William of Normandy. This principle of being governed by an oral, or traditionary law, prevailed in England eleven hundred years before that invasion. It has continued to this day, and has been adopted by all the American states. I hope they will never abolish a system so excellent, merely because it cannot be produced in a visible form. The constitution of Great Britain is a constitution of *principles*,

not of *articles* ; and however frequently it may have been violated by tyrants, monarchial, aristocratical, or democratical, the people have always found it expedient to restore the original foundation, while, from time to time, they have been successful in improving and ornamenting the building."

In the justly celebrated form of the British government, power of every kind, and without limit, is vested in the united will of the crown and two houses of parliament ; but though the concurrence of the throne is necessary to the measures of each, their functions are distinct ; and its perfection consists not only in the equipoise of power between these authorities, but in the strictness with which each is confined to its own boundaries. The acute and animated author of the *Constitution of England* has, in the following paragraphs, given a comprehensive picture of the whole. The subject is here viewed *à priori* ; and this, in some cases, is a very useful point of view.

" If we could, for an instant, suppose that the English form of government, instead of having been the effect of a lucky concurrence of fortunate circumstances, had been established from a settled plan, by a man who had discovered beforehand and by reasoning all those advantages resulting from it which we now perceive from experience, and had undertaken to point them out to other men capable of judging of what he said to them, the following is, no doubt, the manner in which he would have spoken to them :

" Nothing is more chimerical," he would have said, " than a state of either total equality or total liberty amongst mankind. In all societies of men, some power will necessarily arise. This power, after gradually becoming confined to a smaller number of persons, will, by a like necessity, at last fall into the hands of a single leader ; and these two effects (of which you may see constant examples in history) flowing from the ambition of one part of mankind, and from the various affections and passions of the other, are absolutely unavoidable.

" Let us, therefore, admit this evil at once, since it

is impossible to avoid it. Let us, of ourselves, establish a chief among us, since we must, some time or other, submit to one; we shall by this means effectually prevent the conflicts that would arise among the competitors for that station: but let us, above all, establish him single; least, after successively raising himself on the ruins of his rivals, he should finally establish himself, whether we will or not, and through a train of the most disadvantageous events.

“Let us even give him every thing we can possibly give without endangering our security. Let us call him our sovereign; let us make him consider the state as being his own patrimony; let us grant him, in short, such personal privileges as none of us can ever hope to rival him in, and we shall find that what we were at first inclined to consider as a great evil, will be in reality a source of advantages to the community—we shall be the better able to set bounds to that power which we shall have thus ascertained and fixed in one place: we shall have the more interested the man whom we shall have put in possession of so many advantages, in the faithful discharge of his duty; and we shall have thus procured for each of us, a powerful protector at home, and for the whole community a defender against foreign enemies, superior to all possible temptation of betraying his country.

“You may also have observed” he would continue, “that in all states there naturally arises around the person, or persons, who are invested with the public power, a class of men who, without having any actual share in that power, yet partake of its lustre; who, pretending to be distinguished from the rest of the community, do, from that very circumstance, become distinguished from them: and this distinction, though only matter of opinion, and at first thus surreptitiously obtained, yet becomes at last the source of very grievous effects.

“Let us therefore regulate this evil, which we cannot entirely prevent. Let us establish the class of men who would otherwise grow up among us with-



out our knowledge, and gradually acquire the most pernicious privileges : let us grant them distinctions that are visible and clearly ascertained : their nature will, by this means, be the better understood, and they will of course be much less likely to become dangerous. By this means also, we shall preclude all other persons from the hopes of usurping them. As to pretend to distinctions can thenceforward be no longer a title to obtain them, every one who shall not be expressly included in their number, must continue to confess himself one of the people ; and, just as we said before, let us choose ourselves one master that we may not have fifty, so, let us again say on this occasion, let us establish three hundred lords, that we may not have ten thousand nobles.

“ Besides, our pride will better reconcile itself to a superiority which it will no longer think of disputing. Nay, as they will themselves see us to be beforehand in acknowledging it, they will think themselves under no necessity of being insolent to furnish us a proof of it. Secure as to their privileges, all violent measures on their part for maintaining, and at last, perhaps, extending them, will be prevented : they will never combine together with any degree of vehemence, but when they really have cause to think themselves in danger : and by having made them indisputably great men, we shall have a chance of often seeing them behave like modest and virtuous citizens.

“ In fine, by being united in a regular assembly, they will form an intermediate body in the state, that is to say, a very useful part of the government.

“ It is also necessary,” our lawgiver would farther add, “ that we, the people, should have an influence upon the government : it is necessary for our own security ; it is no less necessary for the security of the government itself. But experience must have taught you, at the same time, that a great body of men cannot act, without being, though they are not aware of it, the instruments of the designs of a small number of persons ; and that the power of the people is never

any thing but the power of a few leaders, who (though it may be impossible to tell when, or how) have found means to secure to themselves the direction of its exercise.

“ Let us, therefore, be also beforehand with this other inconvenience. Let us effect openly what would, otherwise, take place in secret. Let us intrust our power, before it be taken from us by address. Those whom we shall have expressly made the depositaries of it, being freed from any anxious care about supporting themselves, will have no object but to render it useful. They will stand in awe of us the more, because they will know that they have not imposed upon us ; and instead of a small number of leaders who would imagine they derive their whole importance from their own dexterity, we shall have express and acknowledged representatives, who will be accountable to us for the evils of the state.

“ But above all, by forming our government of a small number of persons, we shall prevent any disorder that may take place in it, from ever becoming dangerously extensive. Nay, more ; we shall render it capable of inestimable combinations and resources, which would be utterly impossible in that government of all, which never can be any thing but uproar and confusion.

“ In short, by expressly divesting ourselves of a power of which we should, at best, have only an apparent enjoyment, we shall be entitled to make conditions for ourselves : we shall insist that our liberty be augmented : we will, above all, reserve to ourselves the right of watching and censuring that administration which will have been established only by our own consent. We shall the better see its defects, because we shall be only spectators of it : we shall correct them the better, because we shall be independent of it.”

## MAGNA-CHARTA.

Magna-Charta contains the groundwork of the laws and liberties of England. Edward-the-Confessor is said to have been the founder of this national blessing. Henry I. renewed it; his charter is lost; but it was revived by Henry II. who first sapped the feudal system; and by John, at the instance of the barons. Henry III. took pains to learn the extent of the liberties of England during the reign of Henry I. which was probably regarded as the genuine model; and published a new charter, the same as the *magna-charta* now extant. In the fifty-second year of his reign, after some warfare with the barons, he also granted another, called, *The charter of the forest*.

The fendal system having mouldered away, and the condition of the church being materially altered, many of the provisions of the *magna-charta* are now of little apparent moment: but the true value of this celebrated instrument is to be estimated in a philosophical point of view. The path it opened to the future career of justice is to be observed; the outlines of liberal policy which it drew, and the broad and solid basis which it laid down, are to be considered. Several regulations of this charter, however, continue to be important. Care was taken therein to protect the subject against illegal processes for debt due to the crown, and against the abuse of purveyance and pre-emption; the forfeiture of lands in cases of felony was fixed upon its present footing; it prohibited future grants of exclusive fisheries, and the erection of bridges to the injury of the neighbourhood; established the testamentary power of the subject over part of his personal estate, and gave the rest among his wife and children; laid down the law of dower, and prohibited the appeals of women, unless after the deaths of their husbands; enjoined a uniformity of weights and measures; protected merchant-strangers; forbade the alienation of lands in mortmain; prohibited denials of justice, and delays in its administration; fixed the court of common-pleas at Westminster, that the

suitors might no longer be harrassed with following the king's person; established annual assizes; directed the regular awardment of inquests for life or member; prohibited the king's inferior ministers from holding pleas of the crown, or trying any criminal charge; regulated the time and place of holding the inferior tribunals of justice; confirmed the privileges of all cities, boroughs, towns, and ports of the kingdom: it even extended to the lowest orders of the state, since it enacted, that the *villain*, or bondman, should not be subject to the forfeiture of his implements of tillage; and, lastly, it protected every individual of the nation in the free enjoyment of his life, his liberty, and his property, unless declared to be forfeited by the judgment of his peers, or by the law of the land: "*per legale judicium parium suorum, vel per legem terræ.*"—By the 25th of Edward I. it is ordained that this charter shall be taken as the common law; and by the 43d of Edward III. all statutes contradicting it are declared to be void.

## LAWS, COURTS OF LAW, &c.

### *Laws.*

Law may be defined a rule of action, whether the action be performed by a thing animate or inanimate; thus, we say, *law of gravity*, as well as *law of nations*. The first division, therefore, of the compound idea of *law*, is into I. *mechanical law*, and II. *moral law*; the first comprehending the irresistible ordinations of nature; the second, prescriptions, in cases where several modes of action are equally possible.

I. The first class of laws are the objects of *physics*.

II. The second, comprehends what is commonly called *law*; that is, the rule of moral conduct.

Laws are subdivided into several orders: 1. *ethics*, or the law of nature; 2. *divine law*, or the law of revelation; 3. *law of nations*; 4. *municipal law*.

1. The *law of nature*, otherwise called *ethics*, or *morals*, comprehends those rules of right and wrong,

of which the sentiment is in every man's breast, and of the justice of which reflection affords sufficient conviction.

2. The *divine*, or *revealed law*, is that which, not being naturally felt, nor discovered by reflection, is found only in inspired writings.

3. The *law of nations* is that rule of conduct which nations are to observe toward each other. This is founded upon the law of nature; but either ascertained or modified by usage, or by mutual compacts.

4. *Municipal law* is, again, that which is most usually spoken of under the simple term of *law*. It includes whatever belongs to the internal government of a nation. Municipal law is either *criminal*, or *civil*; *criminal*, wherein it prescribes punishments for offenders; *civil*, wherein it prescribes rules for determining disputes on property. Municipal law also comprehends several inferior branches, adapted to specific occasions. The term is, also, occasionally confined to the peculiar laws of a single city; and this is its original meaning.

Law, to be just, must be *prescribed*; that is, it must be fixed, and published, before the act to which it relates has taken place.

*Municipal law of England*, is a body of law, divided into various parts, according to the foundations upon which it stands, or the affairs it is adapted to regulate.

1. Of these parts, the first is the *common law*.

Common-Law, or the *unwritten law*, is so called, says M. de Lolme, because unfounded on any known act of the legislature. It receives its force from immemorial custom; and, for the most part, derives its origin from acts of parliament made in the times that immediately followed the conquest, particularly those anterior to the time of Richard the First, the originals of which are lost. The principal objects settled by the common-law, are the rules of descent, the different methods of acquiring property, and the various forms required for rendering contracts valid; in all

which points it differs, more or less, from the civil-law. Thus, by the common-law, lands descend to the eldest son, to the exclusion of all his brothers and sisters; whereas, by the civil-law, they are equally divided between all the children: by the common-law, property is transferred by *writing*; but, by the civil-law, *tradition*, or actual delivery, is moreover requisite, &c. The source from which the decisions of the common-law are drawn, is what is called *præteritorum memoria eventorum*, and is found in the collection of judgments that have been passed from time immemorial, and which, as well as the proceedings relative to them, are carefully preserved under the title of *records*. In order that the principles established by such a series of judgments may be known, extracts from them are, from time to time, published under the name of *reports*; and these reports reach, by a regular series, so far back as the reign of Edward II. inclusively. Besides this collection, which is pretty voluminous, there are also some ancient authors of great authority among lawyers; such as Glanvil, who wrote under Henry II.—Bracton, who wrote under Henry III.—Fleta and Lyttleton. Among more modern authors, is Sir Edward Coke, Lord Chief-Justice of the King's Bench, under James I. who has written four books of *Institutes*, and is at present the oracle of the common law. This law, moreover, comprehends some particular customs, which fragments of the ancient Saxon laws escaped from the disaster of the conquest; such as that called *gavel-kind*, in the county of Kent, by which lands are equally divided between the sons; and that called *borough-english*, by which, in some particular districts, lands descend to the youngest son.

2. The second, the *statute*, or *written law*, or that which is ordained by the statutes of the king and parliament.

3. The third, the *civil law*.

The Civil-Law, is a body of laws or institutes, that was published under the reign of Justinian, Emperor of Rome, and mingled more or less with the jurispru-

dence of the states of modern Europe. With respect to the origin of this celebrated code, we are told by M. de Lolme, that the law-collection, or system, that was formed by the series of edicts published at different times by the prætors, was called *jus prætorium*, and also *jus honoriarum*, (not strictly binding). The laws of the twelve tables, together with all such laws as had at any time been passed in the assembly of the people, were called, by way of eminence, the *jus-civile*. In England, a general dislike has always been entertained against the civil law; a circumstance which the author already quoted attributes to its having been introduced by the clergy, and written in a language which only the clergy could understand. It happened, therefore, by a somewhat singular conjunction of circumstances, that to the Roman laws, brought over to England by monks, the idea of ecclesiastical power became associated, in the same manner as the idea of regal despotism became afterward annexed to the *religion* of the same monks, when favoured by kings who endeavoured to establish an arbitrary government. The civil law, in the few instances, where, notwithstanding, it is admitted, is comprehended under the unwritten or common law, because it is of force only so far as it has been authorized by immemorial custom. Some of its principles are followed in the ecclesiastical courts, the court of admiralty, and in the courts of the two universities; but it is here nothing more than *lex sub lege graviore*; and these different courts must conform to acts of parliament, and to the sense given of them by courts of common law; being, moreover, subjected to the controul of these latter. The principal defects of the civil law are the want of trial by jury, that only security of private liberty, and the privacy of its proceedings; on the other hand, the writ of *capias*, by which a man's person is arrested and detained for debt, before trial, is unknown to this system. In the administration of criminal justice, according to the rules of the civil law, which in that respect are adopted all over the continent of Europe; as soon as a pri-

soner is committed, he is debarred the sight of every body, till he has gone through his several examinations. One or two judges are appointed to examine him, with a clerk to take his answers in writing; and he stands alone before them, in some private room in the prison. The witnesses are to be examined apart, and he is not permitted to see them till their evidence is closed: they are then confronted together before all the judges, to the end that the witnesses may see if the prisoner is really the man they meant in giving their respective evidences, and that the prisoner may object to such as he thinks proper. This done, the depositions of those witnesses who are adjudged upon trial to be exceptionable, are set aside: the depositions of the others are to be laid before the judges, as well as the answers of the prisoner, who has been previously called upon to confirm or deny them in the presence; and a copy of the whole is delivered to him, that he may, with the assistance of a counsel, which is now granted him, prepare for his justification. The judges are to decide both upon the matter of law and upon the matter of fact, as well as upon all incidents that may arise during the course of the proceedings, such as admitting witnesses to be heard in behalf of the prisoner, &c. This mode of criminal judicature may be useful as to the bare discovering of truth; but, at the same time, a prisoner is so completely delivered up into the hands of the judges, who can even detain him almost at pleasure by multiplying or delaying his examinations, that wherever it is adopted, men are almost as much afraid of being accused as of being guilty, and especially grow very cautious how they interfere in public matters.

Within these three sections are comprized the subdivisions of crown-law; ecclesiastical, or canon, law; forest-law; the law of marque and reprisals; the law of merchants; martial law, &c.

The Laws of England have frequently been made the subject of severe animadversion; and it is not to



be wondered at, if a system, formed of so many broken parts, of ordinances promulgated at so many different periods, adapted to so many different stages of society, and, indeed, made up, in great part, of usage and precedents, and, in civil cases, liable to be changed by every new decision, should appear to those, who look for precision and order, confused and faulty: but whatever censure may be passed upon the unwieldy volumes of this code, Calumny herself cannot utter a breath against its administration. The law of England may be irregular; but its justice is sacredly correct. Its decisions may sometimes be erroneous, though it never errs intentionally, but it is not here that the eyes of the reader, at this moment, should be fixed: he should look on the contrast, if he can picture it to his mind, between this country, and one, where, not merely the mistakes of juries, the perjuries of witnesses, the errors of attorneys, or the expenses of proceedings, impede the course of justice, but where the inferior in station can never hope to gain a cause against the superior. The following testimony of an acute foreigner, a native, not of a monarchy, but of what was once considered as the retreat and fastness of continental freedom, will serve to set this matter in a very conspicuous point of view:

“A little after I came to England for the first time (if the reader,” says De Lolme, “will give me leave to make mention of myself in this case), an action was brought in a court of justice, against a Prince very nearly related to the Crown; and a Noble Lord was also, much about at that time, engaged in a law-suit for the property of some valuable lead-mines, in Yorkshire. I could not but observe, that, in both these cases, a decision was given against the two most powerful parties; though I wondered but little at this, because I had heard much of the impartiality of law-proceedings in England, and was prepared to see instances of that kind: but what I was much surprised at was, that nobody appeared to be in the least so (not even at the strictness with which the ordinary

course of the law had, particularly in the former case, been adhered to), and that those proceedings which I was disposed to consider as *great instances* of justice, to the production of which some circumstances, peculiar to the times, at least some uncommon virtue or spirit on the part of the judges, must have more or less co-operated, were looked upon by all those whom I heard speak about them, as being nothing more than the common expected course of things!—This circumstance became a strong inducement to me to enquire into the nature of a government by which such effects were produced."

#### *Court of Chancery.*

This is the court of the Lord-Chancellor; it is the highest seat of justice in Great Britain, save the Parliament itself. This court is at once the strength of the law, and the bulwark of individuals against its unavoidable imperfections. As a court of common law, it can enforce proceedings in the lower courts; and, as a court of equity, give relief where nothing can be done before a jury, and soften the rigour of law where it falls hardly and unjustly upon individuals. In this court, the law is viewed as always intending to do right; and the *spirit* is consulted, where the *letter* would produce an improper consequence. No plaintiff, however, is to come to this court in any case where remedy can be had at law; and that which can be tried by a jury is not triable in this court.

#### *Court of King's Bench.*

The King's Bench is the supreme court of law. It was, originally, the only one in Westminster-hall, and is the root from which the Courts of Common-Pleas and of Exchequer have arisen. It was in this court that, antiently, the kings of England sat in person; and it was, therefore, always held where the king resided. It still possesses the highest authority; the king himself, by his deputy, still sitting, in the eye of

the law, upon this seat or bench, though the judicial power can only be executed by that deputy; that is, by one of the judges of the court.

Formerly, the chief-justice of this court, who was styled, the *chief-justiciary of all England*, was created by letters-patent; but Edward I. ordained, that this should be done by writ: and this is the present practice.

The jurisdiction of this court is very extensive. Its justices are sovereign justices of oyer and terminer, of gaol delivery, and of eyre; supreme conservators of the peace; and coroners throughout England, some provincial jurisdictions excepted. They have cognizance of all matters of a criminal and public nature, judicially brought before them, to give remedy either by the common law, or by statute; and their power is original and ordinary: that is, after the king has appointed them, they do not derive their jurisdiction from him, but from the law.

Whatever crime is against the public good, though it does not injure any particular person, comes within the scope of the justice of this court; and no subject can suffer any kind of unlawful violence, or injury, to his person, liberty, or possessions, but he may here have a proper remedy: not only by way of satisfaction in damages, but by the exemplary punishment of the offender: for this court is considered as the guardian of the morals of all the subjects of the realm.

It is in the discretion of this court to inflict fine, and imprisonment, or infamous punishment on offenders. It may commit to any prison it shall think proper; and the law allows no other court to remove or bail persons it imprisons: but this court may grant an *habeas-corpus* to relieve persons imprisoned by any other authority or means.

This court can try all causes capable of coming before a jury, in many of which the king is plaintiff; but the *Common-Pleas*, only those between subject and subject.

*Court of Common Pleas.*

This court was formerly part of the *aula regis*; but as this latter court was bound by its institution to follow the person of the king, and private persons, experienced great difficulties in obtaining relief from a court that was ambulatory, and always in motion, it was made one of the articles of the great charter, that the Court of Common-Pleas should thence forward be held in a fixed place; and since that time it has been seated at Westminster. It is composed of a lord chief-justice, with three other judges; and appeals from its judgments, usually called *writs of error*, are carried before the Court of King's Bench. All civil causes, as well real as personal, are triable in this court, according to the law of the land. In personal and mixed actions it has an equal jurisdiction with the King's Bench; but can take no cognizance of pleas of the crown. Thus, informations, in which the king is plaintiff, and the suit criminal, can only be allowed or *granted*, in the King's Bench.

*Court of Exchequer.*

This is an antient court of record, in which all causes concerning the revenues, and rights of the crown, are heard and determined, and where the crown-revenues are received. It took this name from the cloth that covered the table of the court, which was party-coloured or chequered. This court is said to have been erected by William the Conqueror. In the exchequer, some reckon seven courts, viz. those of pleas, accounts, receipts, exchequer chamber, (which is an assembly of all the judges on difficult matters in law), errors in the exchequer, errors in the king's bench, and, lastly, the court of equity in the exchequer; but, for dispatch of business, it is generally divided into two parts; one of which is chiefly occupied in the judicial hearing and deciding of all causes relating to the king's coffers, formerly termed the exchequer of accounts: the other is called the receipt of the exchequer, as being principally employed in

receiving and payment of money. Officers of the receipt may take one penny in the pound, as their fee for sums issued out; and they are obliged, without delay, to receive the money brought thither; and the money received is to be put in chests under three different locks and keys, kept by three several officers. All sheriffs, bailiffs, &c. are to account in the exchequer; and in the lower part, termed the receipt, the debtors of the king, and persons in debt to them, the king's tenants, and the officers and ministers of the court, are privileged to sue one another, or any stranger, and to be sued in the like actions as are brought in the courts of king's bench and common-pleas. The judicial part of the exchequer, is a court both of law and equity. The court of law is held in the office of pleas, according to the course of common-law, before the barons: in this court, the plaintiff ought to be debtor or accountant to the king. The court of equity is held in the exchequer-chamber before the treasurer, chancellor, and barons; but, generally, before the barons only; the lord chief-baron being the chief-judge to hear and determine all causes. The proceedings in this part of the exchequer are by English bill and answer, according to the practice of the court of chancery; with this difference, that the plaintiff here must likewise set forth that he is a debtor to the king, whether he be so or not. It is in this court of equity that the clergy exhibit bills for the recovery of their tythes. Here too the attorney-general exhibits bills for any matters concerning the crown; and a bill may be exhibited against the king's attorney by any person aggrieved in any cause prosecuted against him on behalf of the king, to be relieved therein: in which case, the plaintiff is to attend on the attorney-general with a copy of the bill, and procure him to give in an answer thereto; in the making of which he may call in any person interested in the cause, or any officer, or others, to instruct him, that the king be not prejudiced thereby; and his answer is to be put in without oath. Besides the business relating to debtors, farmers, receivers,

accountants, &c. all penal punishments, intrusion, and forfeitures upon popular actions, are matters likewise cognizable by this court; where there also sits a puisne baron, who administers the oaths to high sheriffs, bailiffs, auditors, receivers, collectors, controllers, surveyors and searchers of all the customs, &c.

### OF JURIES.

A Jury consists of a certain number of persons, sworn to decide justly on the matter before them.

The constitution of England, in committing the administration of justice to the hands of juries, has subjected them to no restraint that can prevent the free discharge of their duty. They are to decide, not only upon the fact, but upon the criminality of the fact. It is also an established maxim, that a juror, in giving his verdict, is to be governed by nothing but his own opinion. Chief-Justice Hales has the following passage in his *History of the Common-Law of England*, chap. 12, § 11.

“In this recess of the jury, they are to consider their evidence, to weigh the credibility of the witnesses, and the force and efficacy of their testimonies; wherein, as I before said, they are not precisely bound to the rules of the civil law, viz. to have two witnesses to prove every fact, unless it be in cases of treason; nor to reject one witness, because he is single; or always to believe two witnesses, if the probability of the fact does upon other circumstances reasonably encounter them; for the trial is not here simply by witnesses, but, *by jury*: nay, it may so fall out, that a jury upon their own knowledge may know a thing to be false that a witness swore to be true, or may know a witness to be incompetent or incredible, though nothing be objected against him—and may give their verdict accordingly.”

It is a striking and pleasing observation of De Lolme, that “the consequence of the institution of Juries is, that no man in England ever meets the man of whom he can say, ‘that man has a power to decide upon my death or life.’”

Juries are of several kinds; among these, there are, in the polity of Britain, *grand* and *petty* juries, in criminal cases; and *common* and *special* in civil.

*Grand-jury*, a body of men of some consideration in their county, summoned by the sheriff for every session of the peace, every commission of oyer and terminer, and of general gaol delivery, and to whom all indictments are preferred.

The summons of a grand-juror requires him, in general terms, "to attend, and inquire, present, do, and execute, all those things, which, on the part of our lord the king, shall be then and there required of him."

The grand-jury must consist of twelve persons at least, and not more than twenty-three; that twelve may be a majority.

The members are instructed in the articles of their inquiry, by the justice who presides on the bench. They then withdraw, to sit and receive indictments, which are preferred to them in the name of the king, but at the suit of any private prosecutor; and they are only to hear evidence on the part of the prosecution: for, the finding an indictment is merely in the nature of an inquiry or accusation, which is afterward to be tried and determined; and the grand-jury are only to inquire, whether there be sufficient cause to call upon the party to answer it.

Formerly, the grand-jury used to indorse their decision upon the indictment, in the Latin tongue; but now, they write upon an indictment which they reject, either the words, *Not a true bill*, or, *Not found*; and upon one, of the truth of which they are satisfied, *A true bill*.

*Petty-jury*, the panel before which the matter contained in an indictment, information, or record, is tried.

*Common-jury* stands opposed to special.

*Special-jury*, a panel composed of persons, *especially* fitted, by the kind of knowledge they possess, to try some peculiar question. There are also special juries in cases where one of the parties is above the common rank.

## BANKRUPT LAWS.

Bankrupt is an appellation given to a person whose bank or stock is exhausted: the word is derived from the French, *banque-route*, which signifies a breaking or failing in affairs of fortune.—From the description given of a bankrupt in our statute-books, he may be defined, “a trader who secretes himself, or does certain other acts tending to defraud his creditors.”

The present system of bankrupt-laws is calculated for the benefit of commerce, and founded on the principles of humanity and justice. Hence they confer some privileges not only on the creditors, but also on the bankrupt or debtor himself; for, by taking into consideration the sudden and unavoidable accidents to which a person engaged in trade is liable, they not only grant personal liberty, but likewise pecuniary assistance, to men in this unfortunate situation; on condition that they surrender their whole estate, to be divided among their creditors. The benefit of the bankrupt-laws, however, are allowed to none but *actual traders*, as these are in general the only persons subject to accidental losses, and to an inability of discharging their debts without any fault of their own. But, when other individuals contract debts, the law renders them subject to the consequences of their own indiscretion.

By the statutes of this country, a man makes himself a bankrupt in consequence of the following acts:—1. By departing from the realm, with intent to defraud his creditors; 2. By leaving his house with intent to secrete himself for the same purpose; 3. Remaining in his house so as not to be accessible to his creditors; 4. Procuring or suffering himself willingly to be arrested, outlawed, or imprisoned, without a just and lawful reason; 5. Causing his money or effects to be sequestrated by any legal process; 6. Making any fraudulent conveyance to a friend, which is an act of the same suspicious nature as the last; 7. Procuring any protection to screen his person from



arrests, though not entitled to that privilege by an act of parliament; 8. Endeavouring, by any petition to the King, or by a bill against any creditors, to compel them to take less than their just debts, or to procrastinate the time of payment; 9. Lying in prison for more than two months upon arrest, or other detention for debt, without finding bail; 10. Escaping from prison after an arrest for a just debt of 100*l.* and upwards; 11. Neglecting to make satisfaction for any just debt to the amount of 100*l.* within two months after service of legal process for such debt, upon any trader enjoying the privilege of parliament.

Sir John Holt maintained, that a man's removing his goods privately, to prevent their being seized in execution, was no act of bankruptcy; as the statutes mention only fraudulent gifts to third persons, and causing them to be seized by sham-process, in order to defraud creditors. It has also been expressly determined, that a banker's stopping, or refusing payment, is not an act of bankruptcy; because there may be good reasons for such conduct, as a suspicion of forgery, &c. If, in consequence of such refusal, he is arrested, and puts in bail, it is still no act of bankruptcy; but, if he goes to prison, and remains there two months, then, and not before, he becomes a bankrupt.

#### *Commission of Bankruptcy.*

This Commission is issued by the Lord Chancellor, under the great seal of England, upon traders becoming bankrupt within any of the statutes, and directed to certain commissioners who are appointed to examine and to secure the bankrupt's lands and effects for the benefit of his creditors.

The following is a sketch of the proceedings under the commission, which may be classed with respect to the bankrupt *personally*, or to his *property*.

In the former case, a petition should be presented to the Lord Chancellor by one creditor, to the amount of 100*l.*; by two, to the value of 150*l.*; or by *three* to the amount of 200*l.* In consequence of this pe-

tion, supported by affidavits of the amount of the debt, the commission is granted.

The petitioners further give bond, in the penalty of 200*l.* that they will make the party amends in case they do not prove him a bankrupt; and if they receive any of the bankrupt's money, or effects, as a recompence for suing out the commission, so as to obtain more than their due proportion of his estate, they shall forfeit the same, together with their whole debt.

On receiving their commission, the commissioners at the first, which is a private meeting, examine into the evidence of the petitioning creditor's debt, and the act of bankruptcy, which, if satisfactorily proved, he is declared a bankrupt accordingly. Notice to that effect is given in the Gazette, and *three meetings* are appointed.

At one of these meetings, generally the second, assignees are chosen by a majority of the creditors in value, whose debts respectively are not less than 20*l.* In these assignees the property of the bankrupt is vested by assignment, for the benefit of the creditors at large.

At the *third meeting*, which (unless the time for surrender be specially enlarged) must be on the forty-second day after the notice in the Gazette, the bankrupt, upon being served with notice, either personally, or at his usual place of residence, must surrender himself to the commissioners, and conform, in every respect, to the statutes of bankruptcy, or, in default, he will be guilty of felony, without benefit of clergy, shall suffer death, and all his effects shall be divided amongst his creditors.

When the bankrupt appears, he is to be examined by the commissioners concerning his trade and effects; and if he give a false statement, or conceal any property to the value of 20*l.* or withhold any books or writings, with intent to defraud his creditors, he will also be guilty of felony without benefit of clergy; but if, on the contrary, the bankrupt have made a true discovery, conformed to the directions of the sta-

tutes, and behaved to the satisfaction of the creditors, they, or *four-fifths of them* in number and value, will sign his certificate, which the commissioners are to transmit to the Lord Chancellor, under their hands and seals, who, or two judges by him appointed, upon affidavit made by the bankrupt that such certificate was not fraudulently obtained, may either allow or disallow the same, upon cause shewn by any of the creditors.

If no cause be shewn against it, the certificate is allowed, the bankrupt is entitled to a certain percentage, allowance out of his effects, proportionate to the amount of the dividend, and, by such certificate, the bankrupt is discharged from all debts due by him before the act of bankruptcy committed.

The above is a brief outline of the proceedings: the following useful details relative to the power of the commissioners, the debts to be proved, the dividends, &c. will be found of importance to all persons in trade.

The commissioners are authorized to issue a warrant, under their hands and seals, for the seizure of all the bankrupt's effects; for which purpose they may break open the house or other place where such effects are suspected to be concealed.

No debts can be proved under a commission, but such as existed at the time of the bankruptcy; or where, if originally contingent, the payment became absolute and certain before the bankruptcy.

Creditors taking bills, bonds, notes, or other personal securities, for their debts, payable at a future day, shall be admitted to prove and receive dividends, although the commission were taken out before the money upon such securities became payable, deducting only the interest.

No debts, however, depending upon a contingency, nor any demand founded upon an illegal contract, can be proved under a commission.

The costs and charges of protesting bills incurred before the bankruptcy may be proved.

No interest is allowed to be computed lower than the date of the commission.

Creditors were formerly precluded from proving after four months; but the court will now, except in cases of gross negligence, or where a dividend will be disturbed, allow them to come in at any time, whilst any thing remains to be disposed of.

*Power of the Assignees.*—The assignees may commence actions at law for the recovery of the bankrupt's effects; but no suit in equity, or submission to arbitration, can be commenced or agreed to, without the consent of a meeting of the majority, in value, of the creditors present at a meeting advertised for that purpose in the London Gazette.

If the assignees act improperly, they are liable at law to the creditors for breach of trust, and may be removed on account of corruption or misbehaviour, or for want of sufficient substance or credit, on petition to the Lord Chancellor.

The assignees are not entitled to the profits arising from a bankrupt's personal labour after the bankruptcy, but any effects coming to the bankrupt after the signature, and before the allowance of the certificate, belong to the assignees, for the benefit of the creditors.

*Examination of the Bankrupt.*—The commissioners may examine the bankrupt, touching his property of every description, securities, books of account, and all documents that may tend to discover his estate.

Persons suspected of concealing any part of the bankrupt's property, may also be examined on oath.

The commissioners are empowered to examine all persons, touching any matter relating to the person, trade, dealings, estate, and effects, of the bankrupt and act of bankruptcy.

*Surrender of the Bankrupt.*—Forty-two days are allowed for this purpose, within which time he is to

surrender and submit himself, from time to time, to be examined, and the commissioners are directed to appoint three several meetings for that and other purposes; the last of which shall be on the forty-second day, which is the day limited for the bankrupt's surrender and appearance; but the Chancellor may enlarge the time to fifty days, to be computed from the end of the forty-two days.

In coming to surrender, the bankrupt shall be free from arrest; and, from his actual surrender for the forty-two days, or the enlarged time for his examination; before the expiration of the forty-two days, or enlarged time, the bankrupt is entitled to inspect his books and papers in the presence of the assignees, or some one by them appointed.

*Of the Certificate.*—Every bankrupt who shall make a full discovery, and conform in every respect to the bankrupt laws, may, with the consent of his creditors, obtain a certificate, which, when certified by the commissioners, and confirmed by the Lord Chancellor, will discharge him from all debts owing at any time before he became bankrupt.

Such certificate must, nevertheless, be signed by *three parts in five* of his creditors, *in number and value*, and who shall be creditors for not less than 20*l.* respectively.

When the certificate has been signed by the commissioners, with an affidavit by the bankrupt that it was obtained fairly, and without fraud, it must be laid before the Chancellor to be by him allowed and confirmed.

If the certificate is allowed before bail are fixed such bail are discharged along with the principal.

If a bankrupt be arrested for any debt due, before he became bankrupt, and proveable under the commission, he shall be discharged on common bail, and may plead that the cause of action accrued before the bankruptcy, and give the act and special manner in evidence.

*Time for making the Dividends.*—The assignees are allowed *four months* from the date of the commission to make a dividend; and as soon after, as circumstances will admit, such dividend ought to be made: it is their duty to apply to the commissioners to appoint a meeting for that purpose; the commissioners may also summon the assignees to shew cause why a dividend has not been made; and if they do not shew cause satisfactorily, the commissioners may appoint such meeting.

An assignee cannot stop a creditor's share of a dividend for his own private debt.

*Bankrupt's Allowance.*—Every bankrupt surrendering and conforming to the act, shall be allowed five per cent. but not exceeding 200*l.* out of the net profits of his estate, if it produces 10*s.* in the pound; seven and an half, but not exceeding 250*l.* if 12*s.* 6*d.*; and ten per cent. but not exceeding 300*l.* if 15*s.*—but such allowance is not to be made until after a second dividend; nor will the bankrupt be entitled to it until he have obtained his certificate.

*Evidence required in Actions brought by Assignees.*—No creditor can be a witness for the assignees, unless he release his interest; nor can a bankrupt be a witness for the assignees, unless he have obtained his certificate, and released them; but he is a good witness against them.

*Costs.*—The solicitor's bill of costs, in suing and prosecuting the commission until assignees are chosen, is to be paid out of the first effects of the bankrupt received under the commission; the subsequent costs to be settled by a master in chancery.

The policy of the bankrupt laws is to protect the persons of innocent and honest traders against those misfortunes which are inevitable, amidst the fluctuations inseparable from commercial credit, and to secure as large a dividend as possible to the creditor.

Excellent, however, as the policy of the legislature has been, frauds, nevertheless, have been practised, which call aloud for reform.

Commissions of bankruptcy are sometimes sued out by a *bona fide* creditor, to obtain his debt; but more generally by some friend of the bankrupt, with the intention of procuring a legal settlement of his affairs, and, by a complete exoneration from all existing claims, to leave free for future operations.

In this latter species of bankruptcy (which, although the most usual, is, nevertheless, illegal, if the bankrupt himself can be proved to have been privy to it), a solicitor is employed, who acts favourably to the bankrupt; assignees are procured in a similar disposition; and unless some of the creditors oppose obstacles, every thing goes on smoothly to the satisfaction of the bankrupt, who soon obtains his certificate, and becomes an unincumbered man.

In the case of a friendly commission, the bankrupt has no inconsiderable risk to encounter; for, after all the protection he may meet with from a large majority of his creditors, a few of those who are dissentient, may overturn the whole transaction, by proving the commission to have been obtained by connivance, and petitioning the Lord High Chancellor, upon an affidavit of facts. The only excuse a man can ever have for conniving at a friendly commission, is to avoid the evils of an adverse one: he should, however, act with as much candour as if he were to be called to the most strict account, by which means the Lord Chancellor, who decides with the greatest impartiality, will pay due attention to his conduct, and not allow a commission to be superseded, where every thing has been done in the bankrupt's power for the benefit of his creditors.

The following is an abstract of Sir Samuel Romilly's act, 49 Geo. III. for altering and amending the laws relative to bankruptcy:

Section 1. repeals so much of a former act as makes

the striking a docket *notice* of a former act of bankruptcy.

Sec. 2. *Executions and attachments* to be valid if executed or levied *more than two months* before the date and issuing of the commission, and such commission, unless superseded, to be deemed *notice* of a previous act of bankruptcy, unless it shall appear that *none* have been committed.

By sections 3 and 4, if creditors do not appoint a *banker*, the commissioners shall, for the receipt of the bankrupt's money, as often as it amounts to 100*l.* or upwards.

Assignees disobeying such instructions to be charged 20*l.* per cent.

By section 5th, all dividends to be declared upon oath. Dividends by admission to be disallowed.

If an assignee being debtor to the estate and effects 100*l.* and upwards, die, the person only shall be charged. Section 6.

Commissioners and notice from the assignees or *five or more* of the creditors, may direct the money paid in to be vested in exchequer bills, for the benefit of the creditors, subject to the controul of the court of chancery; and power is given to such commissioners (subject to such controul) to direct such exchequer bills to be sold, and the money to be laid out in the purchase of other bills for the benefit of the creditors. Section 7.

By section 8, a surety may prove who has paid after the commission issued, provided the principal have not proved; but if the principal have proved, the surety to stand in the place of the creditor; provided that such surety, when he became such, had not notice of an act of bankruptcy; of which the issuing of a commission to be deemed notice.

By section 9, Debts payable *at a future day* may be proved, subject to a discount of 5*l.* per cent. in England, and 6*l.* per cent. in Ireland.

By section 10, In actions brought *by or against an assignee*, the proceedings shall be evidence of the *petitioning creditor's debt, the trading, and act of bank-*



*ruptcy*; unless notice be given by a creditor, that he means to dispute all, or some of these matters: and when such notice shall have been given, and such matters proved at the trial, or admitted, the judge, in his discretion, may certify, and costs shall be taxed in such certificate by the proper officer.

By section 11, The same in proceedings in equity.

By section 12, No action to be brought for *non-payment* of dividend; but on petition to chancery payment to be made, power is also given to order payment of interest on the delay, from the time the dividend should have been paid.

By section 13, Bankrupts in custody *in execution*, may be brought before the commissioners to be examined, in the same manner as now in mesne process.

By section 15, This act not to extend to Scotland.

By section 16, When on a policy of insurance the party interested in the goods shall not be in that part of the United Kingdoms in which the proceedings under the commission are against the person who has effected the policy, though not beneficially interested, may be admitted to prove a loss against the bankrupt, as subscribers or underwriters to such policy.

By section 17, An annuity creditor may prove a debt for *the value* of the annuity; and the certificate shall be a discharge of such debt.

By section 18, *Three-fifths* (instead of *four-fifths* as formerly) of creditors of 20*l.* and upwards, shall be available to the bankrupt in obtaining his certificate.

By the last section, 19th, bankrupts delivering up leases, or agreements for leases, shall not, on the same being accepted by the assignees, be liable to rent, or other covenant under such leases. And the lessor, or person agreeing to make such lease, if the assignees decline determining whether they will accept or not, may apply to chancery, praying that they may either accept or deliver up such lease and possession.

## ARREST AND BAIL.

Arrest is the legal detention of a person charged with some debt due to an individual, or some crime against the State; it is authorised by legal process issuing out of some court, and it is usually performed by one of its officers.

No person can be arrested and held to bail in any civil action, unless the plaintiff make oath that the debt amounts to 15*l.*; in such affidavit he must also swear that no part of the same has been paid, or offered to be paid, in notes of the Governor and Company of the Bank of England.

No officer in any civil action can justify breaking open any *outer doors*, but after having obtained peaceable entry, if the person who is the object of arrest is locked up or fastened in an inner room, he may lawfully break the door to execute his warrant; and where the owner occupies any part of the house, the officer may break open the inner door, though such apartment belong to a lodger.

Where the whole house is let out in lodgings, each lodging is considered as a separate dwelling-house.

At the time of making the arrest, the officer should shew at whose suit the arrest is made, out of what court the process issues, and the cause of action.

It is not necessary, as formerly, but erroneously, supposed, that to complete an arrest the officer must absolutely touch the party, any acquiescence whatever will be a full and effectual arrest.

No officer shall carry his prisoner to a tavern without his consent, nor charge him with any liquor but such as he shall freely call for, nor demand for cap-tion or attendance any other than his legal fee, nor exact any gratuity money, nor carry any prisoner to jail within *twenty-four hours* after his arrest, unless the prisoner refuse to go to some safe house of his own choosing, nor shall any officer take for the diet, lodging, and expences of his prisoner, more than he shall

be allowed by an order of sessions, and the prisoner may, if he think proper, send for his own victuals and bedding, &c.

The following persons are privileged from arrest: members of parliament, peeress by birth, marriage, &c. members of convocation, during the time of their attendance; ambassadors, and their domestic servants; servants belonging to the royal household; marshalls or wardens of the Fleet; clerks, attornies, or persons attending the courts of justice; clergymen performing divine service; suitors, witnesses subpoenaed, and other persons necessarily attending any court of record on business; bankrupts coming to surrender within forty-two days after their bankruptcy; witnesses properly summoned before commissioners of bankruptcy, or commissions under the great seal, but not creditors going to prove their debts.

Executors or administrators, married women, sailors and soldiers, unless the debt amount to 20*l.* and upwards.

No person can be arrested on a Sunday, unless upon an escape warrant, or by his bail.

It has been adopted as a general rule by the Court of Common Pleas, having relation to a suit which requires their attendance, whether bound to attend by process or not, provided they came *bona fide* whilst going and returning, are privileged from arrest.

When an arrest is made by a sheriff's officer in a civil action; he must be authorised by a warrant, but if an action be entered in one of the compters in London, the caption may be made by the city sergeant without any warrant; and by the custom of London, a debtor may be arrested, and compelled to find sureties before the money is due.

In civil cases every defendant is bailable; but in criminal matters it is otherwise. By the ancient common law, before and since the conquest, all felonies were bailable, till murder was excepted by statute. But the stat. Westm. 1. 3 Edw. 1. c. 15, takes away

the power of bailing in treason and divers instances of felony. And the stat. 1. and 2. Ph. and Mar. c. 13, further regulates this matter, so that now no justices of the peace can bail, upon an accusation of treason, of murder, of manslaughter, if the prisoner be clearly the slayer, or an indictment be found against him; nor of felony against those who have broken prison. Outlawed persons, and those who have abjured the realm, approvers, and persons accused by them, persons taken with the *mainour*, or in the fact of felony, persons charged with *arion*, and excommunicated persons, are also inadmissible to bail. Those who must be bailed on offering sufficient security are persons of good fame, charged with a suspicion of manslaughter, or inferior homicide; such persons charged with petit larceny, or any felony not before-mentioned, or with being accessory to any felony. Moreover, it is agreed, that the Court of King's Bench (or any judge thereof in time of vacation) may bail for any crime whatsoever, be it treason, murder, or any other offence, according to the circumstances of the case; such persons only excepted as are committed by either house of parliament during the session, or such as are committed for contempt of any of the king's superior courts of justice.

The refusal or delay of bail to persons bailable, is an offence by the common law, as well as by stat. Westm. 1. 3 Edw. 1. c. 15, and the habeas corpus act 31 Ch. 11. c. 2. And it is expressly declared by 1 Will. and Mar. stat. 2. c. 1, that excessive bail ought not to be required; though it is left to the courts to determine what bail is excessive. If the magistrate take insufficient bail, he may be fined if the criminal do not appear.

Bail is either common or special.

Bail common is that given in actions of small prejudice or slight proof, in which cases any nominal sureties are taken, as John Doe and Richard Roe; this being no other than a form of appearance.

Bail special is given in cases of greater moment, where it is required that the sureties be subsidy men

at the least, and according to the value of the matter in question.

It was enacted a few years ago, in compassion to the poor, that no persons should be held to special bail in any action brought for less than 15*l*.

Bail above, or bail to the action, succeeds the return to the writ, or the appearance of the person bailed. The persons who put in this bail must be at least two in number, and enter into a recognizance, whereby they do jointly and severally undertake, that if the defendant be condemned in the action, he shall pay the costs and condemnation, or render himself a prisoner, or that they will pay it for him; which recognizance is transmitted to the court in a slip of parchment, called the *bail piece*. And, if required, the bail must justify themselves by swearing that they are housekeepers, and each of them worth double the sum for which they are bail, after payment of all their debts.

A regulation with respect to bail has recently been adopted in the courts, by which, where the debt shall amount to 1000*l*. and upwards, the bail shall not be compelled to justify, as was formerly the case, in *double* the sum, but merely for the amount of the debt. In all other cases, however, not exceeding the above sum, the regulations respecting bail remain as before.

### ENGLAND.

This southern division of Great Britain is situated in the Atlantic Ocean, between 2° east and 6° west longitude, and between 49° 55' and 55° 55' north latitude. There are in England, including Wales, fifty-two counties, two archbishoprics, twenty-four bishoprics, two universities, twenty-five cities, upwards of eight hundred towns, and near ten thousand parishes. In civil and political affairs, England is divided into forty counties; in the administration of law and justice, into six circuits; and in church government, into two provinces. Each county has its lord lieutenant and its sheriff, and is subdivided into hundreds. For

each circuit two judges are, from time to time, appointed, who visit it in the spring and autumn. In holding the lent, or spring, assizes, the northern circuit extends only to York and Lancaster; the assizes at Durham, Newcastle, Carlisle, and Appleby, being held only in the autumn, when it is distinguished by the name of the *long circuit*.

The following is a list of the *circuits*, which includes, also, the names of the counties:

1. Home Circuit—Essex, Hertford, Kent, Surry, and Sussex.
2. Norfolk Circuit—Bucks, Bedford, Huntingdon, Cambridge, Suffolk, and Norfolk.
3. Oxford Circuit—Oxford, Berks, Gloucester, Worcester, Monmouth, Hereford, Salop, and Stafford.
4. Midland Circuit—Warwick, Leicester, Derby, Nottingham, Lincoln, Rutland, and Northampton.
5. Western Circuit—Hants, Wilts, Dorset, Somerset, Devon, and Cornwall.
6. Northern Circuit—York, Durham, Northumberland, Lancaster, Westmoreland, and Cumberland.

Middlesex and Cheshire are not comprehended in the above circuits; the former being the seat of the supreme courts of justice, and the latter a county-palatine. There are still distinct courts of chancery in Lancaster and Durham, with chancellors; and there is a court of exchequer at Chester, of a mixed kind, both for law and equity, of which the chamberlain of Chester is judge: there are also other justices in the counties palatine, to determine civil actions, and pleas of the crown.

Besides the forty counties already mentioned, there are *counties corporate*.

*Church of England*, also called the reformed religion (with reference to that of Rome), a system of christianity founded upon the doctrines of Luther. Its dogmas are set forth in *thirty-nine articles*, commonly known by that name. Its government is episcopal, that is, exercised by bishops, who are, in effect, appointed by the crown, the king being, very properly,

the head of the church. The power of making laws in the church belongs to the *convocation*.

## EUROPE.

This quarter of the world is bounded on the north by the Frozen Ocean; on the west by the Atlantic; on the south by the Mediterranean, which separates it from Africa; and eastward by the Archipelago, the Black Sea, the rivers Don, Volga, and Oby; which divide it from Asia. Europe lies between  $9^{\circ} 35'$  west, and  $72^{\circ} 25'$  east longitude, and between  $35^{\circ}$  and  $72^{\circ}$  of north latitude. It is about 3300 miles in length, from Cape St. Vincent in Portugal to the river Oby in Russia, and 2200 miles in breadth, from Cape-Matapan, in the Morea, to Cape-North, in Norway.

II. Its principal peninsulas are those of Spain and Portugal, the Crimea, Norway, Sweden, and Jutland; its mountains, the Pyrenees, the Alps, the Apennines, and the Karpacs or Crapacs; its capes, North, Finisterre, Saint-Vincent, and Matapan; its islands, Great Britain, Ireland, Corsica, Sardinia Sicily, Malta, Candia, Cyprus, the Archipelago, Majorca, Minorca, Ivica, Zealand, and Fionia; its straits, the Sound, St. George's Channel, Dover Channel, Gibraltar, Messina, and the Dardanelles; its gulphs or bays, those of Bothnia, Finland, Murray, Biscay, Lions, Gênes, Venice, and Lepanto; its rivers, the Volga, Don, Nieper, Rhone, Danube, and Rhine; its lakes, Onega, Weter, Melor, Geneva, Constance, Major, and Corni.

III. The principal geographical divisions of Europe are, 1. The north, 2. The middle, and 3. The south. The north or upper division contains Russia, Sweden, Denmark, Norway, and the islands of Great Britain, Iceland, Greenland, and those of the Baltic; the middle division comprehends Poland, Germany, Austria, Hungary, Bohemia, the Low Countries, and France; the southern division comprehends part of Turkey, the greater part of Greece, Switzerland,

\* Italy, Spain, Portugal, and the islands of the Mediterranean.

IV. The principal political divisions are :

- |                          |                          |
|--------------------------|--------------------------|
| 1. Sweden,               | 7. Italy,                |
| 2. Denmark,              | 8. European-Turkey,      |
| 3. Great Britain,        | 9. Russia,               |
| 4. The United Provinces, | 10. Prussia,             |
| 5. France,               | 11. Germany,             |
| 6. Spain and Portugal,   | 12. Hungary and Bohemia, |
|                          | 13. Switzerland.         |

V. The governments of Europe are various : in general, all bear traces of the ancient feudal system. Those of Great Britain and Sweden consist in the happy combination of monarchial, aristocratical, and popular power : others, called absolute monarchies, are rather aristocracies ; and to this class belong the republics.

VI. The established system of religious doctrine and discipline, save in the dominions of the Porte, are all christian.

VII. The languages are various ; the principal radical ones are the Latin, the Teutonic, and Slavonic. The French, a dialect of the Latin, is spoken by all Europeans of education.

VIII. Relatively to the earth in general, the climate of Europe is temperate throughout. Placed in the same comparative view, it is moderate in its productions ; and this circumstance, together with its populousness, renders the prevailing character of its inhabitants that of activity and enterprize. Several discoveries of the utmost importance in the history of mankind, particularly that of the art of printing, have been made, or at least vigorously employed, in this quarter of the globe. The arts and sciences are pursued with zeal ; a spirit of admirable ethics generally diffused ; and if Europeans, who would describe themselves as better and more wise than all the rest of mankind, are to be suspected of some partiality, it must yet be allowed that the natives of this part of the earth are at least entitled to rank as highly as those of any other.



The most striking objects which the history of Modern Europe presents to us, that we shall think fitting our purpose to notice, are—The establishment and abolition of the Feudal System—The Crusades—and the Institution of Chivalry.

### *I. The Feudal System.*

The inhabitants of the north of Europe and Asia, who issued in great multitudes from their native forests, during the fourth and fifth centuries of the Christian era, and who overturned the Roman empire, introduced a new species of government into the conquered countries, known by the name of the feudal system. It is very remarkable, that although the barbarians who framed it settled in their newly acquired territories at various times, were commanded by different leaders, and spoke different languages, yet the system was established, with little variation, in every country in Europe.

The plan of the feudal system was this:—every soldier, upon receiving an allotment of land, bound himself to appear in arms against the common enemy, whenever he should be called upon by his commander. This military service was the condition upon which every vassal received, and the tenure by which he continued to possess his land, which was regarded as a kind of benefice; and this obligation was esteemed both easy and honourable, although the original idea of such a grant being a favour, and not a right, was never entirely lost. The same service which a vassal owed to his lord, was due from a lord to his king. The king obliged those among whom he distributed the conquered lands, whether barons or knights, to repair to his standard with their retainers, in proportion to the extent of their respective estates, well armed and equipped, for a certain number of days, to assist him in all his wars. Thus a feudal kingdom, in its original constitution, conveys rather the idea of a military than a civil establishment.

When William the Conqueror had subdued England, he gave to Hugh de Albrincis, his nephew, the

whole county of Chester, which he erected into a palatinate. Robert, Earl of Montaigne, had 973 manors and lordships; William, Earl Warenne, had 298, and when one of his descendants was questioned as to his right to the lands which he possessed, he drew his sword, which he produced as his title, adding, that William the Bastard did not conquer the kingdom himself, but that the barons, and his ancestors among the rest, were joint adventurers in the enterprize.

The possession of land thus obtained, soon ceased to be precarious; it seemed reasonable, that he who had cultivated and sowed a field should reap the harvest; hence the occupation of a portion of land, or a fief, as it was called in the feudal language, was soon made annual:—as a reward for long and faithful services they were soon granted for life;—and as it was observed that a soldier would in battle risk his life more willingly, if confident that his family would continue to enjoy his estate, fiefs were allowed to descend from father to son. Thus the institution of permanent property was ingrafted upon that of military service, and each century made some addition to the stability of these tenures.

In this manner the great vassals of the crown acquired that land as unalienable property, which was originally a grant during pleasure; and with it they secured proportionable authority and power, and a kind of sovereign jurisdiction, both civil and criminal, within their own domains. The baron, exhibiting the show of royalty, and surrounded by the officers of his household and court of justice, resided in his principal castle, which was a strong and well garrisoned fortress. There he frequently feasted his retainers, with all the rude hospitality of the times, in his spacious hall, amused them with tilts and tournaments, attached them to his service by the ties of dependence and personal attention, and they were ready to draw their swords and devote their lives to his service. He was often involved in some hereditary or personal quarrel with his neighbouring chieftains, or formed a confederacy with them to decide some contest with a

rival power. Sometimes they led their vassals in hostile array against the king himself, a circumstance which frequently happened in the reign of John, Henry III., and the civil wars of the houses of York and Lancaster.

The rights which this institution conferred were important. The lord could levy money from his vassals to supply his necessities; during the minority of the heir to an estate, he could appropriate the rents of the lands, and dispose of an heir, or heiress in marriage, as he pleased. Every kingdom was broken into such baronies, and these baronies into inferior fiefs or knight's fees.

In the reign of Stephen, king of England, not less than a thousand castles, with their dependent domains, are said to have covered the southern parts of Britain. The common people were kept in a state of *villianage*, or slavery. The peasant, or *serf*, was considered as the mere produce of the farm, as much as the cattle, and had no more rights or privileges than the lowest slaves in the West Indies. These circumstances gave the feudal government a strong tendency towards aristocracy, and reduced the authority of every monarch in Europe to such a degree, that he possessed little more than the empty title of the *sovereign lord*, and was frequently exposed to the insolence or the hostility of his barons. His influence was derived from the royal demesnes, or crown lands, more than his general authority.

In modern times it seems reasonable that the king should command the services of any of his subjects for a just cause, more particularly in a case where the legal succession to the crown is concerned; but the following anecdote will shew that this principle could have no influence upon the strict and proper interpretation of feudal obligations. Previously to the departure of St. Louis for the Crusade, he summoned an assembly of his barons to attend him, and required them to swear, that in case of his decease during the expedition, they would be loyal and true to his son. Joinville, his historian, a feudatory of the Count of

Champaigne, though he felt the greatest attachment to the king, refused, on account of his vassalage to the Count, to take the oath; his words were, "he asked me the question, but I would not take the oath, because I was not his man."

There were many lands which were *allodial*, or free, but they were in time absorbed in the feudal system. The possessors soon found themselves in an inferior condition: the feudatories were united under one chieftain, and by their mutual attachment had the same advantages over the proprietors of the other which a regular army enjoys over a dispersed multitude, and were enabled to commit with impunity all injuries against their defenceless neighbours. Every one, therefore, sought for such protection; and each allodial proprietor resigning his possessions into the hands of the king, or some powerful baron, received them back on condition of the feudal services, which, though they laid him under a heavy burthen, at least ensured him protection, and the secure occupation of his lands. The attachment of vassals to their chieftain was still supported by the cause from which it arose; the necessity of mutual protection and the continued intercourse of benefits and services between the lord and his vassals. One of the most striking points of difference between the feudal and the Roman law, was the rule with respect to succession to property. The latter allowed to the eldest son no particular preference; whereas the feudal law allowed him several very important rights. In England, primogeniture obtained in military fiefs as early as the reign of the Conqueror; but with this qualification, that where the father had several fiefs, the first only belonged to the eldest son. In the reign of Henry II. the right of the eldest prevailed absolutely in military fiefs; and in that of Henry III. the same absolute right obtained in *soccage lands*. The eldest son, in the consideration of the law, was the representative of the fee; and the reason seems to rise naturally out of the feudal constitution, that among many sons, he should enjoy the estate who was first old enough to

defend it, and was first able to execute the commands of his lord. However unjust such a preference may be with respect to the division of property, it is eminently advantageous in preventing disputes as to the succession to the crown.

Such a state of society as this, exhibiting only the two extremes of despotic power and servitude, was replete with evils. It was as hostile to the intellectual as to the moral improvement of the mind. During its prevalence, the arts and sciences were banished, mankind were sunk in gross ignorance, and the light of Christianity was obscured in the thickest clouds of superstition. The constant exercise of unlimited power hardened the minds of the nobles, the yoke of vassalage debased the spirit of the people, and the amplest scope was allowed for the predominance of the malignant passions, and every kind of ferocity and violence. Accordingly, a greater number of those atrocious actions, which fill the mind with astonishment and horror, occur in the history of the early feudal times, than in that of any period of equal extent in the annals of Europe.

Such was the state of society from the seventh to the eleventh century. From that period may be dated the regular course of improvement in government, laws, and manners. We shall soon notice the favourable effects of the Crusades and of Chivalry upon the feudal system. In succeeding times a variety of causes began to operate, which softened the rigour of the feudal service, and diminished the power of the barons. The payment of fines called *scutage* money was accepted by the king, instead of personal service in the field, for the mutual accommodation of himself and his vassals; and his army was composed of mercenaries, supported partly by the revenues arising from these fines. Thus monarchs acquired more effectual authority; no longer regarded their nobles as their equals, or found it necessary to have recourse to feeble efforts to control their power. They began not only to hold the sceptre, but to brandish the sword;

and had more complete means to check the designs of their barons by intimidation, or punish their rebellion by force of arms.

## II. *The Crusades.*

Few expeditions are more extraordinary than the seven which were undertaken, from A. D. 1095 to 1270, for the recovery of the Holy Land from the Turks by the Crusades. They took the name of crusaders, or *Croisés*, from the cross which they wore on their shoulders in gold, silk, or cloth. In the first crusade all were red; in the third, the French alone preserved that colour, while green crosses were adopted by the Flemings, and white by the English. Each company likewise bore a standard, on which was painted a cross. If we consider the great numbers of Europeans who were engaged in them, or their long and obstinate perseverance in the same design, notwithstanding numerous hardships, losses, and defeats; and if we reflect upon the important consequences with which these enterprises were attended, both to themselves and their descendants; the history of the crusades, including a period of one hundred and seventy-five years, will be found to deserve particular regard.

From the æra of the crusades may be traced the diffusion of several kinds of knowledge; and from the communication of the western with the eastern nations, arose a succession of causes, which, with different degrees of influence, and with more or less rapidity, contributed to introduce order and improvement into society.

Judea, or the holy land, was the highest object of veneration to the Christians of the middle ages. There had lived the Son of God; there he had performed the most astonishing miracles; and there he had suffered death for the sins of the world. His holy sepulchre was preserved at Jerusalem; and as a degree of veneration was annexed to this consecrated place, nearly approaching to idolatry, a visit to it was regarded as the most meritorious service which could

be paid to heaven; and it was eagerly frequented by crowds of pilgrims from every part of Europe. If it be natural to the human mind to survey those spots, which have been the abodes of illustrious persons, or the scenes of great transactions, with delight, what must have been the veneration with which the Christians of those times, the ruling passion of whose mind was religious enthusiasm, regarded a country, which the Almighty had selected as the residence of his beloved Son, and the place where that Son had shed his precious blood, to expiate the sins, and accomplish the redemption of mankind? The zealous travellers who made a pilgrimage to Palestine were long exposed to the insults, extortions, and cruelty of the Infidels: but at length their complaints roused the Europeans to attempt their expulsion.

The expeditions of the crusades are generally spoken of by Protestants with indiscriminate abuse; but, considering what human history is, they do not, it may appear to impartial eyes, fill a page peculiarly marked with absurdity and bloodshed. War was the business of the barbarians by whom they were undertaken; and the religious ideas they had received were certainly such as to excite and justify the most enthusiastic actions. On the side of the assailants only, two millions of lives are, indeed, computed to have been sacrificed; thousands of children were led to perish, or to be sold for slaves by their schoolmasters, in the Holy Land, deluded by the sophistical application of the words "out of the mouths of babes and sucklings has thou perfected praise;" with these, and a thousand other disasters, they may doubtlessly be reproached: that their crimes were such as to impress the Mahometan nations with lasting hatred of the Christian name, may also be allowed; that their internal-quarrels rendered them despicable foes, and their ferocious manners, infamous conquerors, cannot be denied: but their cruelty was the cruelty of zealots, the dictation of ignorance. When, by the result of temporary success, Jerusalem fell into their hands, the garrison was put to the sword, and the inhabitants,

men, women, sucking children, massacred without distinction; and defenceless females butchered in the caves to which they had fled for refuge: yet these were not the actions of atheists, of men who sat heaven at defiance, or of monsters, without regard, without affection, for their fellow-creatures, or even high notions of moral rectitude; these were the gallant knights of whom christendom has boasted, and of whom she continues to boast; these were they whom so many maidens loved, and by whom so many maidens were protected; and who, even in the very moment of their fury, marched over its dying victims toward the holy sepulchre, and there, while the blood was yet warm on their hands, sung anthems to the Son of God, and burst into tears of gratitude for their victory. Of the turpitude of the crusaders, something is to be attributed to the age, and something to zeal, which never yet was in arms without being ferocious; and posterity may forgive the men to whom, through the energies they called into action, and the learning and refinement which they were the means of bringing from the countries they ravaged, it has been taught to perceive and renounce the errors of which they were guilty.

The principal force of the crusaders in their first expedition was cavalry, chiefly composed of gentlemen invested with the honour of knighthood. When their collected forces were mustered upon the plains of Bithynia, the knights and their martial attendants amounted to 100,000 fighting men, completely armed with the helmet and coat of mail. The Princess Anna, the daughter of the Greek Emperor, compared their numbers, but much in the stile of eastern exaggeration, to locusts, to leaves of trees, or the sand of the sea.

That these wars were, upon the whole, disastrous and unfortunate, can be no subject of surprise, when we consider the manners and the dispositions of those who engaged in them, and the great and numerous difficulties with which they were obliged to contend. Their plans were always uniform; and, in their pro-



jects for the future, they rarely profited by the failure of the past.

The religious enthusiasm of the crusaders was greatly augmented by their love of war. Commerce, manufactures, and arts, were at that time in a state of infancy, and the mass of the people were destitute of regular employments. They eagerly caught at any occasion, which relieved them from a state of inactivity, and afforded room for the indulgence of their favourite inclinations. In the time of the crusades, chivalry began to flourish; and those knights, who were impelled with a romantic desire to travel in quest of adventures, turned their eyes with eagerness to Asia, which promised to open such new scenes of enterprize and glory, as could not be found in Europe. Persons of every rank flattered themselves with the most sanguine expectations of conquest, ~~were~~ confident that victory would attend their steps, and that they should return home loaded with the gold and silver, the diamonds, silks, and other spoils of the East.

The great privileges granted to the crusaders may serve to account for the long continuance of this spirit of adventure. The Popes proclaimed a complete indulgence and pardon for crimes to every one who would take up arms in the cause. Of this offer the profligate took advantage, and eagerly embraced a profession, which placed war, plunder, and conquest, in the list of duties. If they succeeded in this undertaking, they were assured that abundant riches would enable them to live happily on earth; and if they fell victims to a service so meritorious, they were persuaded that the gates of heaven would be open to them, and that they should obtain the crown of martyrdom.

There was another motive, which operated as a strong inducement to the multitudes who assumed the badge of the Cross. At the close of the tenth, and the beginning of the eleventh century, it was the prevailing opinion, that the world would shortly come to an end, and that the Saviour of mankind would

make his second appearance on mount Cavalry. This was the subject of extensive alarm and anxious expectation; and the pilgrims to the Holy Land set out from Europe, with a determination to die there, or to wait the advent of the Lord.

When we consider these various causes, we shall be less surprised at the vast multitudes who resorted to the standard of the Cross, erected in the first crusade by Urban the second, or who afterwards, regardless of the defeats and losses of their predecessors, trod in their steps to meet the same fate.

Various advantages, most of which were neither foreseen nor expected by the agents themselves, were derived from the holy wars. Rude and ignorant as the crusaders were, they could not travel through and continue in so many interesting countries with indifference; or behold their various customs and institutions, without acquiring information and improvement. Among the Greeks they surveyed the productions of the fine arts, and the precious remains of antiquity, the magnificence of the eastern court, and the models of extensive and curious manufactories. In Asia, they beheld the traces of the knowledge and arts which the patronage of the Caliphs had diffused through their empire. Every object which struck their attention pointed out a far higher state of improvement than their own countries had reached; every object, therefore, while it produced the wonder of them all, could not fail to excite a spirit of imitation among those who were active and ingenious. As these new scenes presented themselves, their eyes were gradually opened to a more extensive prospect of the world, and they acquired new modes of thinking, felt a sense of new wants, and a taste for new gratifications.

It is a remark, justified by the experience of ages, that the inhabitants of the western world are distinguished by peculiar acuteness of mind, and an active and imitative spirit. In the course of their expeditions, they acquired a taste for the arts and sciences; and the example of the Arabian and Syrian merchants

taught them the value of trade, and the use of several manufactures. In the superior refinements of Cairo and Constantinople, they discovered various commodities worth importing into Europe. From this period may be dated the introduction of silk and sugar, which were conveyed into Italy from Greece and Egypt; and the advantages which resulted from a more enlarged and adventurous traffic to the Pisans, the Genoese, and the Venetians, who laid the foundation of the modern commercial system. The crusaders began that intercourse with the East, which under the pacific forms of commerce has continued with little interruption ever since. On their return to Europe, they introduced a new taste in buildings, a more superb display of magnificence on public occasions, the rich manufactures of Asia, and the first improvements in learning and science.

The most beneficial effects of the crusades were visible in the alteration, which they occasioned in the state of property, by the emancipation of vassals from the tyranny of their lords, and by increasing the independence of the feudal tenants. Many of the great barons, unable to support the expences incurred by their expeditions to Palestine, sold their lands. The monarchs of different countries embraced these opportunities to annex considerable territories to their own domains, and purchased them at a small expence. The fiefs likewise of those barons, who died in the holy wars without heirs, reverted to their respective sovereigns; and by these possessions being taken from one scale, and thrown into the other, the regal power increased in proportion as that of the nobility declined. The great cities of Italy, which had begun to turn their attention towards commerce, were impatient to shake off the yoke of their lords, and to establish such a government, as would make property secure, and the exercise of industry safe and easy. They purchased or extorted large immunities and grants from the emperors of Germany; and the sovereigns of other countries, particularly of France, followed their example. The great barons were eager

to lay hold of this new expedient for raising money by the sales of charters of independence and enfranchisement to the towns within their domains. Thus commenced the privileges granted to corporations, and the rights acquired by communities of citizens. The benefits which accrued to the public at large by these concessions were of the highest importance, as they were favourable to regularity and good order, to the extension of freedom, the exertions of diligence, and a more exact and uniform administration of justice. Thus we may observe the beneficial effects of the crusades, in producing a new order of things, and erecting the first strong and durable barrier against the tyranny of the Feudal System.

### III. *The Institution of Chivalry.*

We must not mistake imaginary for real chivalry. The former existed only in the old romances, and as such was the object at which many writers aimed their ridicule and satire: but we shall find, on examining the origin and progress of the latter, that it was a noble and a beneficial institution, the result of an enlightened policy, considering the times in which it was established; it increased the glory of the nations in which it flourished: enabled the nobility and gentry of Europe, by the military ardour which it inspired, to resist the arms of the Saracens and Turks; and had a very powerful effect in alleviating the evils of the feudal system, and refining the manners of the higher ranks of society. In times when robbery, oppression, barbarity, and licentiousness, prevailed in most countries of Europe, it supplied, in many instances, although imperfectly, the place of law; and, in the hands of valour, was the instrument of humanity and justice.

France claims the honour of giving this institution its specific character at the time when that kingdom was recovering from the disorders which followed the extinction of the second race of its monarchs. The royal authority began again to be respected, laws were enacted, corporations were founded, and the nume-

rous fiefs, held by the great barons under the crown, were governed with greater regularity. In this state of affairs, the sovereigns and great barons were desirous of strengthening the feudal ties by adding to the ceremony of doing homage, that of giving arms to their young vassals, previous to their first military expeditions. It is highly probable, that by conferring the same distinction upon other persons, who did not hold any lands under them, but who offered their services from motives of esteem, or the desire of military renown, the sovereigns and great barons availed themselves of this expedient to secure the co-operation of new warriors, who were ready to follow their standard upon all occasions, when they could only rely upon their own dependants to serve them in certain districts for a limited time. They received with joy these brave volunteers, who, by increasing their forces, gave additional strength to their government; and as every knight could create other knights, the sovereign exercised his privilege without exciting jealousy. Every gentleman, who was designed for the profession of arms, was trained by a long preparatory course of discipline and service in some noble family, and was, during his youth, the companion of some warrior of renown. The ceremonies which attended his knight-hood were solemn and impressive. They combined the rites of religion with the forms of feudal duty; and resembled the mode of admitting a proselyte into the church by baptism, as well as that of a vassal doing homage for a fief. The candidate for this distinction, accompanied by his sponsors and his priest, passed the night previous to his initiation in watching his arms, and in prayer. The next morning he repaired to the bath, the water of which was intended to serve as an emblem of the purity of his profession. He then walked to the nearest church, clothed in white garments, and presented his sword to the minister officiating at the altar, who returned it to him with his blessing. After taking the accustomed oaths to his sovereign, or feudal chief, he was invested by the attendant knights and ladies with certain parts of

his armour. He was first presented with gilt spurs, a coat of mail, and gauntlets; and lastly he was begirt with a sword. The sovereign then, rising from the throne, conferred upon him, whilst kneeling, the honour of knighthood, by giving him three strokes with the flat part of a drawn sword upon his shoulders or neck. He then saluted the young warrior, and pronounced these words: "In the name of God, of St. Michael, and St. George, I make thee a knight: be brave, bold, and loyal." His horse and the remaining part of his armour were afterwards presented to him, and the ceremony was concluded with a costly banquet.

Important and numerous were the privileges attached to this profession of arms, and its duties were at once arduous and indispensable. To protect the ladies was an essential part of them. Incapable of taking arms, they would frequently in such uncivilized times have seen their lands become a prey to some tyrannical neighbour, or have had their reputation blasted by the breath of calumny, if some knight had not come forward in their defence. To the succour of the distressed, the protection of orphans, the deliverance of captives, and the chastisement of oppressors, he likewise dedicated his sword and his life. If he failed in a scrupulous attention to these duties, he was looked upon as deserting the most solemn obligations, and was degraded with public marks of disgrace. If he performed them, he was regarded as an honour to his profession, and his renown was spread over every part of Europe.

In the character of a true knight, during the golden age of chivalry, we behold an assemblage of virtues, which command our esteem and admiration, and confer honour upon human nature. His deportment was noble, and his manners condescending and gracious to all. His promise was inviolable and sacred; his love of arms was softened by the refinements of courtesy, the fair offspring of that noble society, which he enjoyed in the castles of the great. His professions of attachment and service were invariably sin-

cere; he was as ambitious to render his name illustrious by affability, probity, and generosity, as by the number of his expeditions, trophies, and victories. By such conduct were those civilized knights, whom their contemporaries regarded as the fairest ornaments of chivalry, and whose renown has been transmitted through all succeeding ages. Such were Edward the black prince, the Chevalier Bayard, and Sir Philip Sidney.

*Edward the Black Prince*, so called from the colour of his armour, was the eldest son of king Edward III. the great conqueror of France. At the age of seventeen, he commanded the first line of the English army, at the memorable battle of Crecy. When the fight raged with the greatest heat, the Earl of Warwick solicited the king to send succours to his son. "Tell my son," said he, "that I reserve the honour of the day for him. I am confident that he will shew himself worthy of the honour of knighthood, which I so lately conferred upon him. He will be able, without my assistance, to repel the enemy." The event justified this expectation; the victory of the English was complete, and the king, on his return to the camp, flew into the arms of the prince, and exclaimed, "My brave son, persevere in your honourable course; you are my son, for valiantly have you acquitted yourself to-day; you have shown yourself worthy of empire."

At the battle of Poitiers, fought ten years after, the Black Prince commanded the small army of the English, and obtained a decisive victory over the great multitudes of the French and their allies. John, king of France, was taken prisoner; and the behaviour he experienced, showed the admirable heroism of the conqueror. Edward was 27 years of age, and not yet cooled from the fury of the battle, elated by as extraordinary and as unexpected success as had ever crowned the arms of any general. He came forth to meet the captive king with expressions of regard and sympathy; administered comfort to him; paid him the tribute due to his valour, and ascribed his own

victory to a superior providence, which controuls the efforts of human force and prudence. A magnificent repast was prepared in his tent for the prisoner, and he served himself the royal captive's table, as if he had been one of his retinue. He refused to take a place at the table; all his father's pretensions to the crown of France were forgotten, and John in captivity received the honours of a king, which were refused when he was seated on the throne. The French prisoners, conquered by this elevation of mind, more than by their late discomfiture, burst into tears of joy and admiration.

The prince conducted his royal prisoner to Bordeaux, concluded a two years truce with France, and soon after landed at Southwark, where he was met by a great concourse of people of all ranks. "His prisoner, John King of France, was clad in royal apparel, and mounted on a white steed, distinguished by its size and beauty, and the richness of its furniture. The conqueror rode by his side in meaner attire, and carried by a black palfry. In this situation, more glorious than all the insolent parade of a Roman triumph, he passed through the streets of London, and presented the King of France to his father, who received him with the same courtesy, as if he had been a neighbouring potentate that had voluntarily come to pay him a friendly visit. It is impossible, on reflecting on this noble conduct, not to perceive the advantages which resulted from the otherwise whimsical principles of Chivalry, and which gave, even in those rude times, some superiority even over people of a more cultivated age and nation."

A knight was always known by a device on his shield, and the peculiarities of his blazonry, which were allusive to some of his martial exploits. Great honours were paid to him after his decease, particularly if he was slain in battle. His funeral was most solemn and very fully attended. His sword, helmet, spurs, gauntlets, and armorial ensigns, were suspended over the hallowed spot of his interment, or his cenotaph. His splendid tomb, graced with his effigy,



and marked with a suitable inscription, was considered as a tribute of respect to his virtues, and an incentive to inflame the youthful warrior to tread the same path of valour and renown.

Chivalry was indebted to religion for much of the ardour with which its votaries were animated. During its flourishing state, no institution could obtain credit, unless consecrated by the church, and closely interwoven with the religious opinions of the times. To the incentives of zeal, was added the spirit of gallantry. The youthful knight, previous to his going forth upon any warlike expedition, devoted himself to the service of some lady, who was usually the object of his ardent love. It was his most lively hope that her smiles and her hand would reward his valour: he bore her device upon his arms; to her he consecrated his trophies; and to gain her favour, he was ready, upon all occasions, to meet danger, and shed his blood. This passion was the keenest incitement to his heroic actions, and fired his mind with unabating enthusiasm. Amid foreign invasion or domestic feuds, where the opposing barons and their vassals encountered each other in the hottest engagements; the faithful knight, as he couched his lance, and rushed to meet the foe, invoked the mistress of his heart, and gloried by such achievements to render himself worthy of her regard. When peace brought a short interval of repose, and rival knights contended in the jousts and tournaments, the applauding lady often adjudged the prizes to the victorious champions. In the lofty hall decked with banners and trophies of war, when the banquet was given to the jocund train of nobles, and their gallant companions in arms; the harp and the songs of the minstrel resounded the praises of the fair; and every pageant and celebrity concurred to keep the mind in the same direction to its beloved object.

The ambition of pleasing a favourite lady, and of being worthy to be considered as her champion, was a motive which stimulated a knight to the most daring actions. Many instances are recorded in the history of the middle ages, of the height to which this ro-

mantic gallantry arose. It was not unusual for a knight in the midst of a battle or a siege, to challenge his enemy to single combat, and refer to the decision of arms the transcendent beauty of their ladies. A solemn duel of thirty knights against thirty was fought between Sir Bembrough, an Englishman, and Beaumonoir, a Breton of the party of Charles de Blois. The knights came into the field, and before the combat began, Beaumonoir called out, that it would be seen that day *who had the fairest mistresses*. After a bloody combat, the Bretons prevailed, and gained for their prize full liberty to boast of the beauty of their ladies. It is remarkable, as it shews the spirit which chivalry inspired, that two such famous generals as Sir Robert Knolles and Sir Hugh Calverley drew their swords in this ridiculous contest.

The treatment of women in Greece and Rome was rigid and degrading. They had few attentions paid to them, and were allowed to take little share in the general intercourse of life. The northern nations, on the contrary, paid a kind of religious veneration to the female sex, considered them as endowed with superior and even divine qualities, gave them a seat in their public councils, and fellowed their standard to battle. They introduced into the west of Europe the respectful gallantry of the north; and this benevolence of sentiment was cherished and matured by the institution of chivalry. A female of rank, instead of having only a retired place in society, was brought forward into a conspicuous point of view; she became the umpire of valour, the arbitress of victory, and at once the incentive and the reward of courageous actions. Naturally elated at beholding the power of her charms, she became worthy of the heroism which she inspired, improved in the dignity of her character, and formed her sentiments upon the pure principles of honour. The distinguished prowess of the knight was counterbalanced by the strict and spotless chastity of the lady, and these virtues long continued to countenance and to reward each other: they were encouraged by the modes, the habits, and the circumstances

of the times, and found ample room for growth and expansion in the baronial states.

Thus it appears, that in the institution of chivalry were blended valour, humanity, justice, honour, courtesy, and gallantry. Their combined effects were soon visible in the manners of a martial age. The horrors of war were softened, when humanity began to be esteemed the ornament of knighthood. More condescension and more affability were introduced, when courtesy was recommended as the most amiable of knightly virtues. A strict adherence to truth, with the most religious attention to every engagement, became the distinguishing characteristic of every gentleman, because chivalry was regarded as the school of honour. It is the remark of the excellent historian Robertson, "that, perhaps, the *humanity* which accompanies all the operations of war, the *refinements of gallantry*, and the *point of honour*, the three chief circumstances which distinguish modern from ancient manners, may be attributed in a great measure to this whimsical institution."

The dispositions and sentiments which chivalry produced, were so deeply rooted, that they continued to predominate long after its spirit had evaporated, and the institution had become an object of neglect and ridicule. Generosity and a love of enterprize, the qualities to which it owed its birth, when once directed to objects that interested the affections, were not likely to be short in their duration, or partial in their effects. The refined assiduities of men naturally directed the attention of women to themselves, as well as to their admirers; and this circumstance produced a gradual improvement in female education. The men, quitting the formality of the feudal times, and the hyperbolical style of making love, of which many curious instances may be found in the old romances, became less artificial in their compliments, and softer in their manners. Women became sensible of the importance of mental improvement, and of heightening the charms of nature with elegant accomplishments, and the graces of affability and complaisance.

## PUBLIC FUNDS.

The Public Funds are debts due from government to the public, for sums advanced by various persons at different times, and for payment of the interest of which taxes are imposed.

In former times the expences of war, which were very inconsiderable compared with those latterly, were defrayed by extraordinary taxes, imposed at the time, or by money accumulated in the coffers of the state.

The system of defraying the expences of war by loans, was first adopted by the state of Florence, in 1349; it was followed up by Louis XIV. of France, who funded, although in a very irregular mode, the immense debts which were incurred by occasion of his long and expensive wars; and finally, by William III. from which period it has been gradually accumulated to a magnitude which nothing but the most unexampled national prosperity could have supported.

The debt thus contracted bears a certain proportionate rate of interest, and is denominated stock, which, although it is *debt* with respect to the nation, is *stock* to the persons receiving interest, who can transfer or sell their capital whenever they please.

*Directions for dealing in the Public Funds.*

As soon as you mix among the crowd at the bank, you will hear confused cries resounding on every side, and will not be long before you meet with a seller, if you want to buy, or with a purchaser, if you want to sell. If you want to buy, you must demand the price; which, if it be not during the troubles of war, or any foreign commotion that may endanger the peace of Europe, you will find to be nearly the same with that in the public papers of the preceding day. If the party who means to sell should, like yourself, be no broker, he will name you the whole price, as 73 5-8ths, or whatever the price may be, for *three per cent. consol. annuities*; but if he be a master in the arts of the Alley, he will only mention to you the

fraction of the price, as one-fourth, one-eighth, five-eighths, according to the present state of the market.

Do not be in a hurry, but wait a little, and see if any body will offer at a lower price. Should you wait some time, and nobody offer to sell you, venture to exert yourself, and call out with an audible voice, that you are a buyer of one, two, or three hundred, or whatever the sum may be, in the Consols, &c.

When you have found a seller of the sum you wish to purchase, you will frequently be obliged to give the turn of the market; that is, if there be any doubt whether the market price exactly corresponds with what he asks, or rather inclined to fall one-eighth beneath it, you must give up trifles in order to expedite your business. Were you to employ a broker, instead of doing your own business, you would generally find it the same thing.

The following table shows the value of every fraction used in the business of the fund :

		<i>s.</i>	<i>d.</i>
1-8th	is	2	6
1-4th	—	5	0
3-8ths	—	7	6
1-half	—	10	0
5-8ths	—	12	6
3-4ths	—	15	0
7-8ths	—	17	6

From hence it is evident, if you are asked 73 5-8ths per cent. for Three per Cent. Consols. Annuities, that you are to pay 73*l.* 12*s.* 6*d.* that being the market price of one hundred pounds in the stock above-mentioned.

Having agreed with the seller concerning the price, you are then to give him your address, that is, your christian and surname, the name of the place you live in, and your title or profession. He being the seller, it is his business to take care of the transfer, and prepare the receipt. In the mean time, it will be necessary for you to take care to have the money ready for payment. Those who keep money at their

bankers, and are well known on the exchange, generally give a draft on them for the sum agreed on.

It will be necessary for you to keep in one part of the room, till the transfer is prepared, that you may be at hand when wanted; for if you be not in the way when called upon, the clerk will not wait for you, but will proceed to other business, which may occasion much delay.

As soon as the transfer is prepared, and your name called, you must go to the clerk who keeps the transfer-book, who will shew you in what form the seller has transferred the sum agreed for, to you, your heirs, and assigns. It will be necessary for you, the first time you transact business of this nature, to read this form, in order that you may be well acquainted with the nature of the assignment. After this you will be directed to set your name to a form of acceptance of the stock transferred to you, the seller having first set his hand to the transfer. This being done, the clerks witness the printed receipt, which the seller gives you signed by him, and which you must keep as a voucher for the transfer, till you have received one dividend; at least such is the custom, though it is difficult to give any solid reason why it should be so. At any rate, however, the receipt is of no use after receiving the first dividend, when it had better be destroyed than kept. Many people have kept these receipts long after they have sold out their stock, and their ignorant executors, on finding them, have supposed they have discovered a mine, which they at last find, to their sorrow, had long before been exhausted. Having paid the sum, and taken the receipt, the whole affair is transacted; and this is the whole of the business the buyer has to attend to. However, be sure to take care to sign the acceptance in the transfer-book, before you pay your money to the seller.

We must now speak of the concerns of a seller, which admit of very little more trouble than what the buyer experiences.

The three per cent. consolidated annuities, being by much the largest stock, buyers and sellers are

more easily found for it, and consequently more business is done in that fund than in any other. We shall, therefore, confine ourselves to that stock in our present observations, the different mode of transacting other stocks being very trifling.

As soon as a purchaser is procured, which is obtained in the same manner as a buyer, the seller must be provided with a quarter of a sheet of paper, and write on it his own name and address, together with the sum to be transferred, from what fund it is to be transferred, and the person's name and address to whom it is to be transferred.

You will observe, that all the letters of the alphabet are placed in large characters against the wall where the clerks sit. You must deliver this paper to the clerk that stands nearest to, or under the letter, with which your name begins. As soon as you have delivered in your paper, the clerk will examine your account, and after having satisfied himself that you have such property there, he prepares the transfer. While that is doing, you must make out the purchaser's bill on a printed receipt, of which there are plenty always hanging up in every office.

Having signed your receipt, and the transfer being ready, you are to sign it in the book, and then to deliver your receipt to the clerk; who, as soon as the purchaser has signed his acceptance in the book, will witness the receipt. You are then to take your money of the purchaser, and the business will be completed.

The chief causes which naturally contribute to lower the price of the funds, may be divided into two classes, viz. those which happen in times of *war*, and those which occur in times of *peace*.

With respect to the first, it has always been noticed, that in proportion as the demands of government increase, the interest of money will rise; and individuals, from a prospect of employing their money more advantageously in new loans, will sell out of the old funds; especially those which bear the lowest interest. This will happen as early as possible, because the advantage will be the greater; therefore speculators will

crowd to market as soon as they have intelligence of a rupture with any considerable power, that they may sell before the fall increases. The difficulty will be to distinguish between rumours of war, and the actual approach of this national calamity. There can be no surer guide in this place, than an impartial scrutiny into the political situation of our country, the state of its commerce and revenues, the character of its prince and his ministers, compared with the same circumstances in the nation with whom a war is expected, which will, in some degree, determine what kind of credit we ought to give to reports of an unavoidable rupture.

Should the events of war prove unsuccessful, and we lose valuable settlements abroad, the funds will fall, from a concurrence of sellers, many of them merchants, who depended on remittances from the conquered places, and for want of them are obliged to part with their funded property. The apprehension of more misfortunes will likewise engage others in the same predicament.

Powerful alliances formed against the interest of the kingdom, having a tendency to endanger its political existence as an independent state, will affect the funds; for the public defence must require unusual supplies, which, increasing the value of money, by the great demand for it, will lower the price of the old funds.

An actual invasion of a foreign enemy is most to be dreaded; for the universal panic that such an event would occasion no adequate remedy can be prescribed. We well know, that men will naturally make use of the liberty this free country gives them, and withdraw their persons and property, with the utmost expedition, from the seat of war. It is difficult, if not impossible, to say how the value of the funds, in this case, might sink in a few days, owing to the vast concourse of sellers; and, probably, nothing would prevent a total cessation of the market for them, for the want of purchasers, but the patience, fortitude, and discernment of a few opulent individuals, who would



take this opportunity to buy, actuated chiefly by the hopes of great gain, and, in some measure, by just reflections on the uncertain issues of war. The storm may subside, and public tranquillity being restored, the funds may recover their former value.

Some would say, "If we have patience, and do not part with our property in the funds, the state of affairs may alter, and we shall then have no reason to complain of our conduct." Others might reflect, that, at such a crisis, if they had near and dear connections, which prevented them from leaving the kingdom, they should be subject to the same inconveniencies with cash by them, if not more, than if they had remained proprietors in the funds. In the time of the great civil war, men were obliged to bury their money and plate, and they generally passed to other possessors; the families which concealed them being torn from the place by the hand of violence, or the person actually depositing them taken off by the hand of death. The history of every country, where foreign conquests or intestine commotions have produced temporary revolutions, furnishes instances of treasures concealed, lost, and sometimes not discovered for ages after.

The possessors of land would not be in a much better situation than the proprietors of our funds, in case of a revolution from foreign or domestic causes, since it is well known that landed estates are always bestowed as rewards on the victorious chiefs.

There are, perhaps, no events in the course of human affairs, besides those already mentioned, which ought to affect the value of the funds in time of war, so as to lower the current price considerably; but several circumstances may contribute to advance it, such as signal successes, the return of great treasures taken from the enemy, and the approach of peace. The two first, however, are only to be considered as adventitious events, since a reverse of fortune, or an extra demand for money, may, in a few months, reduce the enhanced value; but the last is a sufficient cause for a gradual rise, in proportion as the value

of money diminishes, from the great demand for it ceasing.

Let us now state the principal circumstances which ought to have any considerable influence on the funds in time of peace; and here we may premise, that when the nation enjoys perfect tranquillity, when there is no sudden large demand for money, nor any considerable sums in specie poured into the kingdom, no variation beyond two per cent. in the price of the funds ought to take place; if it does, independent of the following causes, it may be considered as *artificial*, and a *trick of the Alley*.

Orders from foreigners to vest very considerable sums in the funds, at any stated times.

The return of great wealth, derived from our Asiatic commerce and territorial jurisdiction; or of immense fortunes acquired by individuals, in the administration of the Company's affairs in India.

A steady, judicious, uncorrupt, and economical administration of the revenues of the kingdom: a general good understanding between every branch of government and the people, with a prospect of the duration of peace, and of such a ministry, so that the value of money must fall daily. These are the chief events that may make the funds rise considerably from the concourse of purchasers, who will find no other channels open for employing their money to equal advantage.

The funds are equally liable to sink considerably beneath the market price, if any of the following unhappy occurrences disturb the peace and security of the kingdom.

The dangerous illness, or sudden death, of the reigning prince.

A disunion of any of the branches of the three estates of the kingdom.

The advancement, to the highest offices of the state, of men of weak minds, corrupt hearts, and debauched manners.

A general mistrust and want of mutual confidence between administration and the public at large, caus-

ing mutual complaints and reproaches, and engendering parties and divisions, which tend to tumults, popular insurrections, and civil wars.

A stagnation, or considerable failure, of private credit; earthquakes, inundations, or fires, destroying any part of our commercial settlements, by which our merchants at home are so distressed for want of remittances, that they are obliged to part with their property in the funds to supply the defects.

Lastly, a dearth of provisions, or the plague, both of which would cause considerable emigrations of independent people of property.

If any other contingent public calamity should hereafter occur to the minds of any future proprietors of the funds, let them use their own discretion in applying them; at present one general rule may be sufficient for the conduct of those who are, and those who may be disposed to become proprietors in the funds.

Watch attentively the real value of money, and what interest it will bear on the best landed security in the kingdom. When the landed interest is high, and the stocks low, let those who have property in them avoid selling out; and those who wish to purchase, lose no time to do so. In short, be constantly on your guard against idle rumours on the state of public affairs at home or abroad.

## EXCHANGE.

Exchange, in commerce, implies the receiving or paying of money in one country for a similar sum in another, by means of bills of exchange.

The necessity of fixing some mode by which the balance due to one nation might be paid to another, as well as by which individual dealers might settle their accounts, as originated by the different species of money made current within the boundaries of different countries, this necessity gave place to bills of exchange. With respect to the value of different species of money, the ounce of pure gold or silver has

been taken for a general standard, and the quantity of either of these metals contained in the coin of different countries, determines the sum of one which shall be paid for a certain sum of another; thus, for example, 24 French livres contain as much intrinsic value as 20 good English mint shillings, or 1*l.* sterling. The exchange thereof, with France, is 24 livres to 1*l.* sterling, and so of other countries.

*Bill of Exchange*, is a mercantile contract, whereby one person orders another to pay a certain sum of money at a certain time to a third, or to his order, at a time therein specified. The person making the bill is called the drawer; the person upon whom the bill is drawn, the drawee; and the person in whose favour the payment is to be made, the payee. When the drawee has accepted the bill, he is then termed the acceptor.

Bills of exchange may be divided into foreign or inland; the former, when the parties are resident in different countries, and the latter, when they remain within the realm.

A promissory note differs from a bill of exchange, as having but two parties, viz. the maker of the note, and the payee or the person to whom it is made payable; when it is indorsed, the resemblance begins, and the laws and regulations with respect to these instruments are the same as those relative to bills of exchange.

A bill of exchange must be made in writing, drawn by the party himself, or some person by him legally authorised; and such drawing of itself, raises a contract to pay the same, without reference to any other transaction between the parties.

Beside those merchants who circulate among themselves their reciprocal debts and credits, arising from their importation and exportation of goods, there is another class of men who deal in exchange; that is, in the importation and exportation of money and bills. When, however, balances are to be made, exchange becomes intricate; and merchants, being engaged in their particular branches of trade, commonly intrust

these complicated calculations to certain agents, who are thence called *exchange-brokers*, and have made this a most lucrative employment.

*The Course of Exchange*, is the current price between two places, which is always fluctuating and unsettled, being sometimes above, and at others below par, according to the circumstances of trade. When the course of exchange rises above par, the balance of trade is said to run against that country where it rises. But, though the course of exchange be in a perpetual fluctuation, and rise or fall, according to various circumstance, yet the exchanges of London, Hamburgh, Amsterdam, and Venice, regulate those of all the other trading places of Europe.

*Days of Grace*, in commerce, is a customary number of days allowed for the payment of a bill after it becomes due. Three days of grace are allowed in England; ten in France and at Dantzic; eight at Naples; six at Venice, Amsterdam, Rotterdam, and Antwerp; four at Frankfort: five at Leipsic; twelve at Hamburgh; six at Portugal; fourteen in Spain; and thirty in Genoa.

*Par*. When two things, of different denominations, are equal to each other in value, they are then said to be, with respect to each other, equal, or at par. The public funds are said to be so much above or below par, as they exceed or fall short of sterling value; thus, when the five per cents. were at 98*l*. they were said to be two per cent. below par, or 100*l*. sterling in value.

Gold and silver are at par with the coin of the country, when the coin melted down will sell for the same that it passed current for in the form of money: the exchange between two countries is said to be at par, when the monies of each pass for their real value in bullion, without any fictitious depression or value arising from the plenty or scarcity of the one or the other.

The variations which take place arise from there being, as has been observed, a greater or less balance

to pay; for the country which has more money to receive than it has to pay, will be always sure to have the exchange in its favour, in which case, the money of that country passes for a little more than its worth, whilst the other passes for something less.

### THE FISHERIES.

This important occupation constitutes a very considerable source of wealth to Great Britain, whether considered as a nursery for her seamen, as supplying the poor with cheap and wholesome food, or as giving employment to a considerable number of mechanics, who are occupied in those manufactures which originate in, or are connected with, the fisheries.

The fisheries have been emphatically termed by Dr. Franklin, the *agriculture of the ocean*; those of America are considered by that writer as one of her principal sources of national wealth; and it was to her fisheries, that Holland was indebted for that commercial and political consequence, which, previous to her subjugation to France, enabled her almost to rival Great Britain.

The principal fisheries for salmon, herring, mackrel, pilchards, &c. are along the coasts of England, Scotland, and Ireland; for cod, on the banks of Newfoundland; for whales, about Greenland; and for pearls, in the East and West Indies.

*Anchorey-Fishery.* Anchovies are fished for on the coast of Provence, in the months of May, June, and July, at which season shoals of this fish regularly come into the Mediterranean through the straits of Gibraltar. They are likewise found in plenty in the river of Genoa, on the coast of Sicily, and on that of the island of Gorgone opposite to Leghorn; these last are reckoned the best. Anchovies are seldom fished for but in the night-time. If a fire be kindled on the poops of the vessels used for this fishing, the anchovies will come in greater numbers into the nets; but then it is asserted, that the anchovies taken thus by fire, are neither so good nor so firm, and will not

keep so well, as those which are taken without fire. When the fishery is over, they pull off the heads of all the anchovies, gut them, and afterwards range them in barrels of different weights, the largest of which do not weigh above 25 or 26 pounds, and they put a good deal of salt in them. Some also pickle them in small earthen pots made on purpose, of two or three pounds weight, more or less, which they cover with plaster to keep them the better.

*Cod-Fishery.* There are two kinds of cod-fish, the one green or white cod, and the other dried or cured cod, though both are the same fish differently prepared, the former being sometimes salted and barrelled, then taken out for use, and the latter having lain some competent time in salt, dried in the sun or smoke. We shall therefore speak of each of these apart; and first of the

*Green Cod-Fishery.* The chief fisheries for green cod are in the bay of Canada, on the great bank of Newfoundland, on the isle of St. Peter, and the isle of Sable, to which places vessels resort from divers parts both of Europe and America. The most essential part of the fishery, is to have a master who knows how to cut up the cod, one who is skilled to take the head off properly, and, above all, a good salter, on which the preserving them, and consequently the success of the voyage, depends. The best season is from the beginning of February to the end of April; the fish, which in the winter retire to the deepest water, coming then on the banks, and fattening extremely. What is caught from March to June keeps well, but those taken in July, August, and September, when it is warm on the banks, are apt to spoil soon. Every fisher takes but one at a time: the most expert will take from 350 to 400 in a day; but that is the most, the weight of the fish, and the great coldness on the bank, fatiguing very much. As soon as the cod are taken, the head is taken off; they are opened, gutted, and salted, and the salter stows them in the bottom of the hold, head to tail, in beds a fathom or two square; laying layers of salt and fish

alternately, but never mixing fish caught on different days. When they have lain thus three or four days to drain off the water, they are replaced in another part of the ship, and salted again; where they remain till the vessel is loaded. Sometimes they are cut in thick pieces, and put up in barrels for the conveniency of carriage.

*Dry Cod-Fishery.* The principal fishery for dry cod, is from cape Rose to the bay des Exports, along the coast of Placentia, in which compass there are divers commodious ports for the fish to be dried in. These, though of the same kind with the fresh cod, are much smaller, and therefore fitter to keep, as the salt penetrates more easily into them. The fishery of both is much alike, only this latter is more expensive, as it takes up more time, and employs more hands, and yet scarce half so much salt is spent in this as in the other. The bait is herrings, of which great quantities are taken on the coast of Placentia. When several vessels meet and intend to fish in the same port, he whose shallop first touches ground, becomes intitled to the quality and privileges of admiral: he has the choice of his station, and the refusal of all the wood on the coast at his arrival. As fast as the masters arrive, they unrig all their vessels, leaving nothing but the shrouds to sustain the masts, and in the mean time the mates provide a tent on shore, covered with branches of trees, and sails over them, with a scaffold of great trunks of pines, twelve, fifteen, sixteen, and often twenty feet high, commonly from forty to sixty feet long, and about one-third as much in breadth. While the scaffold is preparing, the crew are fishing, and as fast as they catch they bring their fish ashore; open and salt them upon moveable benches; but the main salting is performed on the scaffold. When the fish have taken salt, they wash and hang them to drain on rails; when drained, they are laid on kinds of stages, which are small pieces of wood laid across, and covered with branches of trees, having the leaves stripped off, for the passage of the air. On these stages they are disposed, a fish thick, head against



tail, with the back uppermost, and are turned carefully four times every twenty-four hours. When they begin to dry, they are laid in heaps ten or twelve thick, in order to retain their warmth; and every day the heaps are enlarged, till they become double their bulk; then two heaps are joined together, which they turn every day as before; lastly, they are salted again, beginning with those first salted, and being laid in huge piles, they remain in that situation till they are carried on board the ships, where they are laid on the branches of trees disposed for that purpose, upon the ballast, and round the ship, with mats to prevent their contracting any moisture.

There are four kinds of commodities drawn from cod, viz. the zounds, the tongues, the roes, and the oil extracted from the liver. The first is salted at the fishery, together with the fish, and put up in barrels of from 600 to 700 pounds. The tongues are done in like manner, and brought in barrels from 400 to 500 pounds. The roes are also salted in barrels, and serve to cast into the sea to draw fish together, and particularly pilchards. The oil comes in barrels, from 400 to 520 pounds, and is used in dressing leather.

The Scots catch a small kind of cod on the coast of Buchan, and all along the Murray Firth on both sides; as also in the Firth of Forth, Clyde, &c. which is much esteemed. They salt and dry them in the sun upon rocks, and sometimes in the chimney. They also cure skait, and other small fish in the same manner, but most of these are for home consumption.

*Herring-Fishery.* Herrings are chiefly found in the north-sea. They are a fish of passage, and commonly go in shoals, being very fond of following fire or light, and in their passage they resemble a kind of lightning. About the beginning of June, an incredible shoal of herrings, probably much larger than the land of Great Britain and Ireland, come from the north on the surface of the sea: their approach is known by the hovering of sea-fowl in expectation of prey, and by the smoothness of the water.

*Mackrel-Fishery.* The mackrel are found in large shoals in the ocean, but especially on the French and English coasts. They enter the English channel in April, and proceeding as the summer advances; about June, they are on the coasts of Cornwall, Sussex, Normandy, Picardy, &c. where the fishery is most considerable. They are taken either with a line or nets: the latter is preferable; and is usually performed in the night-time. They are pickled two ways, first by opening and gutting them, and cramming their bellies as hard as possible with salt, by means of a stick, and then laying them in rows at the bottom of the vessel, strewing salt between each layer. The second way is putting them directly into tubs full of brine, made of salt and fresh water, and leaving them to steep till they have taken salt enough to keep. After this, they are barrellled up and pressed close down.

*Pilchard-Fishery.* The chief pilchard fisheries are along the coasts of Dalmatia, on the coast of Bretagne, and along the coasts of Cornwall and Devonshire. That of Dalmatia is very plentiful: that on the coasts of Bretagne employs annually about 300 ships. The pilchards caught on our coasts, though bigger, are not so much valued as those on the coasts of France, owing principally to their not being so thoroughly cured. They naturally follow the light, which contributes much to the facility of the fishery: the season is from June to September. On the coasts of France they make use of the roes of the cod-fish, as a bait, which, thrown into the sea, makes them rise from the bottom, and run into the nets. On our coasts there are persons posted ashore, who, spying by the colour of the water where the shoals are, make signs to the boats to go among them to cast their nets. When taken, they are brought on shore to a warehouse, where they are laid up in broad piles, supported with backs and sides; and as they are piled, they salt them with bay salt, in which lying to soak twenty or thirty days, they run out a deal of blood, with dirty pickle and bitterness: then they wash them

clean in sea-water, and, when dry, barrel and press them hard down to squeeze out the oil, which issues out at a hole in the bottom of the cask. The cornish men observe of the pilchard, that it is the least fish in size, most in number, and greatest for gain, of any they take out of the sea.

*Salmon-Fishery.* The chief salmon fisheries in Europe are in England, Scotland, and Ireland, in the rivers, and sea-coasts adjoining to the river mouths. Those most distinguished for salmon in Scotland, are the river Tweed, the Clyde, the Tay, the Dee, the Don, the Spey, the Ness, the Bewley, &c. in most of which it is very common about the height of summer, especially if the weather happen to be very hot, to catch four or five score of salmon at a draught. The chief rivers in England for salmon are the Tyne, the Trent, the Severn, and the Thames. The fishing usually begins about January, and in Scotland they are obliged to cease about the 15th of August, because, as it is then supposed the fish come up to spawn, it would be depopulating the rivers to continue fishing any longer. It is performed with nets, and sometimes with a kind of locks or wears made on purpose, which, in certain places, have iron or wooden grates so disposed, in an angle, that, being impelled by any force in a contrary direction to the course of the river, they may give way and open a little at the point of contact, and immediately shut again, closing the angle. The salmon, therefore, coming up into the rivers, are admitted into these grates, which open, and suffer them to pass through, but shut again, and prevent their return. Salmon are also caught with a spear, which they dart into them, when they see them swimming near the surface of the water. It is customary likewise to catch them with a candle and lanthorn, or wisp of straw set on fire; for the fish naturally following the light, are struck with the spear, or taken in a net spread for that purpose, and lifted with a sudden jerk from the bottom.

*Curing Salmon.* When the salmon are taken, they open them along the back, take out the entrails and gills, and cut out the greatest part of the bones, endeavouring to make the inside as smooth as possible, then salt the fish in large tubs for the purpose, where they lie a considerable time soaking in brine, and about October they are packed close up in barrels, and sent to London, or exported up the Mediterranean. They have also, in Scotland, a great deal of salmon salted in the common way, which, after soaking in brine a competent time, is well pressed, and then dried in smoke: this is called kipper, and is chiefly made for home-consumption, and, if properly cured and prepared, is reckoned very delicious.

*Sturgeon-Fishery.* The greatest sturgeon-fishery is in the mouth of the Volga, on the Caspian Sea, where the Muscovites employ a great number of hands, and catch them in a kind of inclosure formed by large stakes, representing the letter Z, repeated several times. These fisheries are open on the side next the sea, and close on the other, by which means the fish, ascending in its season up the river, is embarrassed in these narrow angular retreats, and so is easily killed with a harping-iron. Sturgeons, when fresh, eat deliciously, and in order to make them keep, they are salted or pickled in large pieces, and put up in cags from thirty to fifty pounds. The great object of this fishery is the roe, of which the Muscovites are extremely fond, and of which is made the caviare or kavia, so much esteemed by the Italians.

*Whale-Fishery.* Whales are chiefly caught in the north sea: the largest sort are found about Greenland, or Spitzbergen. At the first discovery of this country, whales, not being used to be disturbed, frequently came into the very bays, and were accordingly killed almost close to the shore, so that the blubber being cut off was immediately boiled into oil on the spot. The ships in those times took in nothing but the pure oil and the fins, and all the business was executed in the country, by which means a ship could bring home the product of many more whales than

she can according to the present method of conducting this trade. The fishery also was then so plentiful, that they were obliged sometimes to send other ships to fetch off the oil they had made, the quantity being more than the fishing ships could bring away. Time, however, and change of circumstances, have effected that alteration in the concern which in every similar case it is reasonable to expect. The ships coming in such numbers from Holland, Denmark, Hamburgh, and other northern countries, in addition to the English, who were the first discoverers of Greenland, the whales disturbed, and gradually, as fish often do, forsaking the place, were not to be killed so near the shore as before, but are now found, and have been so ever since, in the openings and spaces among the ice, where they have deep water, and where they go sometimes a great many leagues from the shore.

The whale-fishery begins in May, and continues all June and July; and whether the ships have good or bad success, they must come away and get clear of the ice by the end of August; so that in the month of September, at farthest, they may be expected home: but a ship that meets with a fortunate and early fishery in May, may return in June or July.

The manner of taking whales at present is as follows. As soon as the fishermen hear the whale below, they cry out *fall! fall!* and every ship gets out its long-boat, in each of which there are six or seven men: they row till they come pretty near the whale, then the harpooner strikes it with the harpoon. This requires great dexterity, for through the bone of his head there is no striking, but near his spout there is a soft piece of flesh, into which the iron sinks with ease. As soon as he is struck, they take care to give him rope enough, otherwise, when he goes down, as he frequently does, he would inevitably sink the boat: this rope he draws with such violence, that, if it were not well watered, it would, by its friction against the sides of the boat, be soon set on fire. The line fastened to the harpoon is six or seven fathoms long, and

is called the forerunner: it is made of the finest and softest hemp, that it may slip the easier: to this they join a heap of lines of 90 or 100 fathoms each, and when there are not enough in one long-boat, they borrow from another. The man at the helm observes which way the rope goes, and steers the boat accordingly, that it may run exactly out before; for the whale runs away with the line with so much rapidity, that he would overset the boat, if it were not kept straight. When the whale is stuck, the other long-boats row before, and observe which way the line stands, and sometimes pull it: if they feel it stiff, it is a sign the whale still pulls in strength; but if it hangs loose, and the boat lies equally high before and behind upon the water, they pull it in gently, but take care to coil it so, that the whale may have it again easily if he recovers strength: they take care, however, not to give him too much line, because he sometimes entangles it about a rock, and pulls out the harpoon. The fat whales do not sink as soon as dead, but the lean ones do, and come up some days afterwards. As long as they see whales, they lose no time in cutting up what they have taken, but keep fishing for others: when they see no more, or have taken enough, they begin with taking off the fat and whiskers in the following manner. The whale being lashed along-side, they lay it on one side, and put two ropes, one at the head, and the other in the place of the tail, which, together with the fins, is struck off, as soon as he is taken, to keep those extremities above water. On the off side of the whale are two boats to receive the pieces of fat, utensils, and men that might otherwise fall into the water on that side. These precautions being taken, three or four men, with irons at their feet, to prevent slipping, get on the whale, and begin to cut out pieces of about three feet thick, and eight long, which are hauled up at the capstan or windlass. When the fat is all got off, they cut off the whiskers of the upper jaw with an axe. Before they cut, they are all lashed to keep them firm, which also facilitates the cutting, and prevents

them from falling into the sea. When on board, five or six of them are bundled together, and properly stowed, and after all is got off, the carcass is turned adrift, and devoured by the bears, who are very fond of it. In proportion as the large pieces of fat are cut off, the rest of the crew are employed in slicing them smaller, and picking out all the lean. When this is prepared, they stow it under the deck, where it lies till the fat of all the whales is on board; then cutting it still smaller, they put it up in tubs in the hold, cramming them very full and close. Nothing now remains but to sail homewards, where the fat is to be boiled and melted down into train oil.

*Pearl-Fishery.* Pearls are taken in the seas of the East Indies, in those of America, and in some parts of Europe. Those taken in Europe are in some places on the coast of Scotland, particularly in the rivers Teith and Ythan, which furnish a large kind of mya or muscle, and pearls, some of which are in the shape of a pear, and others pink on one side; and in a river of Saxony called Elster, where the shells are about six inches long, but the pearls found here are no ways comparable to those of the East Indies, or of America; though they serve for necklaces, which are sold sometimes for a thousand crowns, and upwards.

*Manner of fishing for Pearls in the East Indies, particularly in the isle of Ceylon.* About twelve miles from Manaar, and in the gulf so called, lies the bay of Condatchy, where all the boats are collected for the pearl-fishery. At this time the bay is crowded with small vessels, and the beach presents an astonishing multitude of people from every quarter of India. Several thousands of people of different colours, countries, casts, and occupations, continually passing and repassing; vast numbers of small tents and huts erected on the shore, with the bazar or market-place before them; a multitude of boats returning in the afternoon from the pearl banks; the anxious countenances of the boat-owners, while the boats are approaching the shore, and the eagerness and avidity

with which they run to them when arrived, in hopes of a rich cargo; the vast number of jewellers, brokers, merchants, of all colours and all descriptions, both natives and foreigners, who are occupied in some way or other with the pearls, some separating and assorting them, others weighing and ascertaining their number and value, while others are hawking them about, or drilling and boring them for future use:—all these circumstances tend to impress the mind with the value and importance of that object, which can of itself create this scene. The banks, where the fishery is carried on, extend several miles along the coast from Manaar southward of Arippe, Condatchy, and Pomparipo. The principal bank is opposite to Condatchy, and lies out at sea about twenty miles. The first business, previous to the commencement of the fishery, is to survey the different oyster banks, to ascertain the state of the oysters, and to make a report on the subject to government. If the quantity is found to be sufficient, and in a proper state of maturity, the particular banks to be fished that year are put up for sale to the highest bidder, and are usually purchased by a black merchant.

The fishing season commences in February, and ends about the beginning of April. The period allowed the merchant for fishing the banks is six weeks, or at the most two months; but the interruptions that occur prevent the fishing days from exceeding more than about thirty.

During the season, all the boats regularly sail out and return together. A signal gun is fired at Arippe about ten o'clock at night, when the whole fleet sets sail with the land-breeze. They reach the banks before day-break, and at sun-rise commence fishing. In this they continue busily occupied till the sea-breeze, which arises about noon, warns them to return to the bay. As soon as they appear within sight, another gun is fired, and the colours hoisted, to inform the anxious owners of their return. When the boats come to land, their cargoes are immediately taken out, as it is necessary to have them completely unloaded be-



fore night. Whatever may have been the success of their boats, the owners seldom wear the looks of disappointment; for, although they may have been unsuccessful one day, they look with the most complete assurance of better fortune to the next.

Each of the boats carries twenty men, with a *Tindal* or chief boatmen, who acts as pilot. Ten of the men row and assist the divers in re-ascending. The other ten are divers; they go down into the sea by five at a time; when the first five come up the other five go down; and, by this method of alternately diving, they give each other time to recruit themselves for a fresh plunge.

In order to accelerate the descent of the divers, large stones are employed: five of these are brought in each boat for the purpose; they are of a reddish granite, common in this country, and of a pyramidal shape, round at top and bottom, with a hole perforated through the smaller end sufficient to admit a rope. Some of the divers use a stone shaped like a half moon, which they fasten round the belly when they mean to descend, and thus keep their feet free.

These people are accustomed to dive from their very infancy, and fearlessly descend to the bottom in from four to ten fathoms water, in search of the oysters. The diver, when he is about to plunge, seizes the rope, to which one of the stones we have described is attached, with the toes of his right foot, while he takes hold of a bag of net-work with those of his left; it being customary among all the Indians to use their toes in working or holding as well as their fingers; and such is the power of habit, that they can pick up even the smallest thing from the ground with their toes as nimbly as an European could with his fingers. The diver, thus prepared, seizes another rope with his right hand, and holding his nostrils shut with the left, plunges into the water, and by the assistance of the stone speedily reaches the bottom. He then hangs the net round his neck, and with much dexterity, and all possible dispatch, collects as many oysters as he can while he is able to remain under water, which is

usually about two minutes. He then resumes his former position, makes a signal to those above by pulling the rope in his right hand, and is immediately by this means drawn up and brought into the boat, leaving the stone to be pulled up afterwards by the rope attached to it.

The exertion undergone during this process is so violent, that, upon being brought into the boat, the divers discharge water from their mouths, ears, and nostrils, and frequently even blood. But this does not hinder them from going down again in their turn. They will often make from forty to fifty plunges in one day; and at each plunge bring up about a hundred oysters. Some rub their bodies over with oil, and stuff their ears and noses to prevent the water from entering; while others use no precautions whatever. Although the usual time of remaining under water does not much exceed two minutes, yet there are instances known of divers who could remain four and even five minutes, which was the case with a Caffre boy a few years back. The longest instance ever known was that of a diver who came from Anjanga in 1797, and who absolutely remained under water full six minutes.

The divers are paid differently, according to their private agreement with the boat-owners. They are paid either in money, or with a proportion of the oysters caught, which they take the chance of opening on their own account; the latter is the method most commonly adopted.

The pearls found at this fishery are of a whiter colour than those got in the gulf of Ormus, on the Arabian coast, but in other respects are not accounted so pure, or of such an excellent quality; for though the white pearls are more esteemed in Europe, the natives prefer those of a yellowish or golden cast. Off Tutucoreen, which lies on the Coromandel coast, nearly opposite to Condatchy, there is another fishery; but the pearls found there are much inferior to those two species we have mentioned, being tainted with a blue or greyish tinge.

*Manner of fishing for Pearls in the West Indies.* The season for fishing there is usually from October to March. In this time there set out from Carthagena ten or twelve barks, under the convoy of a man of war called l'Armadilla. Each bark has two or three slaves for divers.

Among the barks there is one called Capitana; to which all the rest are obliged to bring at night what they have caught in the day, to prevent frauds. The divers never live long, by reason of the great hardships they sustain; continuing sometimes under water above a quarter of an hour. The method is the same as in the East Indian fisheries.

Besides these fisheries, there are several others both on the coasts of Great Britain and in the north seas, which, although not much the subject of merchandize, nevertheless employ great numbers both of ships and men; as,

1. The oyster fishing at Colchester, Feversham, the Isle of Wight, in the Swales of the Medway, and in all the creeks between Southampton and Chichester, whence they are carried to be fed in pits about Wevenhoe, and other places.

2. The lobster fishing all along the British channel, the firth of Edinburgh, on the coast of Northumberland, and on the coast of Norway, whence great quantities are brought to London.

And, lastly, the fishing of the pot-fish, fin-fish, sea-unicorn, sea-horse, and the seal or dog-fish, all which are found in the same seas with the whales, and yield blubber in a certain degree; besides, the horn of the unicorn is as estimable as ivory, and the skins of the seals are particularly useful to trunk-makers.

## FOOD.

With respect to the proper articles of food, there can be no doubt but that every thing which man has inclination for is adapted to his wants: yet local circumstances, and prevalent habits, may so govern the

conduct of individuals, as to induce them to partake of particular indulgences in disproportionate degrees. Society, by fixing a multitude on a narrow spot of ground, necessarily affects the means of subsistence. Convenience becomes the great law: this even dictates what shall, and what shall not, be called luxury: it is the basis of civil manners: now, nothing can be more evident that there are certain kinds of food with which it is convenient to supply a city, and others with respect to which it is much the contrary. It is extremely convenient to bring such as may be packed in close parcels, as tea and spices: such as may be deposited in warehouses, and used when called for, as corn; and, next, such as may be brought from a distance without great expence in the transit, and without losing their market-value, as animals: but how are green vegetables and fruits to be brought with any similar convenience? What extent of ground, in the first place, shall we allot for a supply that shall render London as full as these of a village? or, grant the extent of ground, and by what mode of carriage shall we convey them to its markets? or, in what portion of time, that they shall not be putrescent when they arrive? or, grant that we have blood-horses and flying-waggons to obviate these difficulties, at what price, after all, are they to be sold?

From this view of the subject it will probably appear, that the food usually offered to civilized man, and the habits of choice to which he is induced, are dependent on other causes than natural inclination. It will also appear that, speaking directly of British cities, the two principal kinds of food most conveniently supplied to them are flesh and bread, under which latter article *potatoes* may be included. Now, bread is fitted for a basis of food by its insipid taste; but nature has not produced so many tasteful foods with the intention that man should touch nothing but what is insipid. Is it wonderful then that flesh should be taken in abundance, where little else that is savoury can be procured at a similar expense?

The facility with which animal food is to be pro-

cured in cities, in comparison with an uncivilized state of things, is another cause of the excess in which it is consumed.

It is said *excess*, for there is but one voice on this subject. All know that animal food is consumed by every Briton that can purchase it, in a degree at once not only unnecessary to the sustenance, but actually destructive of the health of himself, and calamitous to the community.

I. That it is unnecessary to his sustenance is evident from the health and strength enjoyed by those who, from habit or necessity, do not partake of it in any proportionate degree. Animal food is said to give strength; yet the most laborious class of the people eat of it the least. The fields are ploughed by men who have seldom more than one meal of flesh in seven; and if it should be said that these people and their families are not those who undergo the hardest labour, it will at least be allowed that they have greater calls on their strength than thousands of those who, in cities, consume yet more of this food than any description of labourer that can be instanced.

II. With respect to the health of body and mind, to the first, animal food is liable to prove destructive by inducing, besides other evils, plethora and all its consequences, while vegetable, without the utmost indolence, and sharpest appetite, never does; and to the second, the favourableness of the vegetable is matter of general belief. "It appears," says a writer on the present subject, "that delicacy of feeling, liveliness of imagination, quickness of apprehension, and acuteness of judgement, more frequently accompany a weak state of the body. It is true, indeed, that the same state is liable to timidity, fluctuation, and doubt; while the strong have that steadiness of judgment, and firmness of purpose, which are proper for the more active scenes of life. The most valuable state of the mind, however, appears to reside in somewhat less firmness and vigour of body. Vegetable aliment, as never over-distending the vessels, or loading the system, never interrupts the stronger motions

of the mind; while the heat, fulness, and weight of animal food, are an enemy to its vigorous efforts."

III. In illustration of the calamities brought on the community, attributed, indeed, to this or that trivial cause, but in reality owing to the vast consumption of animal food, it will be impossible to do better than quote the following intelligent observations:

"That butchers' meat may now be considered as the *staff of life*, by persons of every description in *England*, and not *bread*, as it was in former times, cannot be doubted by any intelligent person who reflects seriously on the subject. Consequently, the same quantity of corn is not consumed by the same number of people now as formerly, but a much greater quantity of meat. Few persons having as yet adverted to the consequences of this change in the diet of the people, on the means of finding subsistence for them from a given extent of land, we shall venture to state a few facts, which will tend to throw some light on the important subject of our present disquisition.

"The produce of one acre under potatoes will be sufficient to sustain one man 5625 days, or a little more than fifteen men and a half for one year.

"The produce of one acre under wheat would sustain one man 915 days, or two men and one-half nearly for one year.

"The produce of one fertile acre in pasture, consumed by cattle or sheep, would sustain one man 72 days, or somewhat less than one-fifth of one man for one year.

"Hence it appears, that the produce of five acres of fertile grazing land will be required to sustain one man, who lives entirely on butchers' meat, for one year:

"That the same five acres of land, if cropped with wheat, would sustain 12 men and one-half for one year: and,

"That the same five acres of land, if cropped with potatoes, would sustain 77 men and a half!!!

"From this plain statement, it will appear very ob-

vious that, however profitable it may be for the farmer and the landlord to convert corn-ground into pasture, it must prove highly detrimental to the public, when the mode of finding subsistence for a given number of people, from a given extent of land, is the object in view. The lowest estimate which we can make is, that, on an average of crops, the same extent of land under tillage would sustain 15 times the number of people that it could feed if converted into grass; and that, by extraordinary exertions, the cultivated land might be made to sustain more than four times the number last specified."

The conclusions of an argument are sometimes hastily inferred, and that which is said briefly must often be deficient in explicitness; yet it is hoped that the present observations will not be considered as representing vegetable food as alone 'proper for mankind. What is contended for is a due mixture. Age, constitution, climate, season, and mode of life, are all circumstances that should vary the relative proportions; but every one should enjoy variety of diet.

### THE DRAMA.

Drama may be defined a poem, or theatrical representation of some certain action, and representing a true picture of human life, for the delight and improvement of mankind. The principal species of the drama are two, comedy and tragedy. "It is impossible to ascertain," says an anonymous writer, "the exact period when theatrical amusements were first introduced into England; they are mentioned as having existed very early by William Fitz-Stephen, a monk of Canterbury, in his *Descriptio nobilissimæ civitatis Lundonæ*, written soon after the year 1170.—"*Lundonia pro spectaculis theatralibus, pro ludis scenicis, ludos habet sanctiores, representationes miraculorum quæ sancti confessores operati sunt, seu representationes passionum, quibus claruit constantia martyrum.*" London, instead of common interludes belonging to the theatre, has plays of a more holy subject: representations of

those miracles which the holy confessors wrought, or of the sufferings wherein the glorious constancy of the martyrs did appear. These representations being mentioned as neither new or uncommon, we may reasonably conclude them to be of a date still more ancient; and they continued a long time after to be the only subjects for the drama; in which Pater Cœlestis, or The Heavenly Father, Our Blessed Saviour, The Virgin Mary, The Twelve Apostles, &c. were the leading characters. In the year 1378 the scholars of Paul's School presented a petition to king Richard II. praying him to prohibit some inexpert people from presenting the History of the Old Testament, to the great prejudice of the said clergy, who had been at great expence in order to represent it at Christmas. On the 18th of July, 1390, the parish clerks of London (by which expression we are to understand, *The Clergy*) played interludes at the Skinner's Well, near Clerkenwell, which continued three days; king Richard II. his queen, and nobles, being present. And in the year 1409 they performed a play at the Skinner's Well, the subject being *The Creation of the World*, which lasted eight days; having the chief nobles and gentry of England for their audience. These *Mysteries*, as they were denominated, were followed by a species of the drama, stiled *Moralities*, in which the senses, passions, affections, virtues, and vices, were personified, and constituted the characters: these being of a moral turn, and contrived to entertain as well as instruct, soon exhibited some dawnings of poetry, with occasional attempts at wit and humour, which naturally introduced *comedy*. The earliest English piece, meriting that title, is *Gammer Gurton's Needle*, written by Dr. Still, performed at Christ's College, Cambridge, and printed in 1551. *Tragedy* soon after appeared with becoming dignity in *Ferrex* and *Porrex*, otherwise *Gorboduc*, written by Thomas Sackville and Thomas Norton; the former, who was afterwards Lord Buckhurst, &c. was also author of the admirable Induction to The Complaint of Henry Duke of Buckingham, in *The Mirror for Magistrates*.



This noble and pathetic tragedy was acted before queen Elizabeth, Jan. 18, 1561; was spuriously printed in 1565, and afterwards, under the author's inspection, in 1570 or 1571. At this period a fool was almost indispensable on the stage, not only in comedies, but also in the deepest tragedies, of which character no dramatic writer has availed himself more successfully than Shakespeare; his *Touchstone* in *As you Like it*, and *Fool* in *King Lear*, being, among many others which he produced, remarkable instances. In the infancy of the stage the players were priests; afterwards retainers to noblemen, under the sanction of whose name they performed; at length they were embodied and incorporated under royal authority; and, in the end, restricted and protected by acts of parliament, framed for the preservation of order and decorum in themselves, and their safety and encouragement in the exhibition of the scenic art. When the *Mysteries* were the only dramatic performances, the stage, as is still the custom at Pekin, consisted of three distinct platforms, raised one above another; on the uppermost sat the *Pater Cælestis*, surrounded with his angels; on the second appeared the glorified saints; and the lowest was occupied by mere men, who had not yet quitted "the smoke and stir of this dim spot." On one side of this lowest platform was the resemblance of a dark and pitchy cavern, whence issued an appearance of fire and flames; and, when necessary, the audience were stunned by hideous yellings, imitative of the howlings of wretched souls, tormented by relentless demons, who frequently ascended through the mouth of the cavern to delight the spectators with their buffooneries, and to instruct them, by their remorseless cruelty to the condemned, carefully to shun the commission of such crimes, as might plunge themselves into a similar predicament. In an improved state of the theatre, when regular plays were introduced, the cavern, with its concomitant, though heterogeneous, mixture of horror and mummary, was abolished; the uppermost platform, and its celestial *personæ*, also disappeared; two plat-

forms only remaining, which continued in use a considerable time; the upper one serving for galleries, ramparts, or any other elevated situation, from which some of the actors might discourse with others, standing on the lower one, now called *the stage*.

The characters from the earliest times to that of the restoration were personated by men or boys; at which period Mrs. Hughs was the first female who appeared in a regular drama, in the character of Desdemona: unless, as Mr. Malone with great appearance of probability conjectures, Mrs. Sanderson (afterwards Mrs. Betterton) may claim priority. The stage decorations and ornaments (if they may be so called) were formerly very homely; a piece of old tapestry serving for the scene; which you was to imagine, as the story of the drama required, represented a street, a grove, a castle, or the ocean; the stage was strewn with rushes, and the dresses made of buckram and baize, laced with lacquered leather: but what better could be expected for the prices taken? for, at so low a rate as *two-pence* were some of the seats in our ancient theatres; there were others at *6d.*; *1s.* and (the highest) *2s. 6d.* Some of the audience sat on stools upon the stage; drank wine and beer, cracked nuts, and smoked tobacco during the performance. The *Mysteries* were frequently represented in churches, and on the Sabbath; which practice it is thought was continued even after prophane subjects had been introduced: the playing in churches was restrained by Bishop Bonnor, in 1542, but the acting of plays on the Sabbath-day continued till the reign of Charles I. at which period the players generally began to act at three o'clock in the afternoon, that the whole might be performed by daylight. The *Mysteries* seem in later times to have furnished the ground-work for another noted stage-performance, entitled a *Puppet-show*; as appears from the following bill, printed in the reign of Queen Anne, taken from the collection of title pages in the Harleian library, marked 5931:

“ By her majesty's permission, at Heatly's booth,

over against the *Cross Daggers*, next to Mr. Miller's booth, during the time of *Bartholomew fair*, will be presented a little opera, called *The old Creation of the World* new revived, with the addition of the glorious battle obtained over the *French* and *Spaniards*, by his Grace the Duke of *Marlborough*. The contents are these, 1. The creation of *Adam* and *Eve*. 2. The intrigues of *Lucifer* in the garden of *Eden*. 3. *Adam* and *Eve* driven out of *Paradise*. 4. *Cain* going to plow; *Abel* driving sheep. 5. *Cain* killeth his brother *Abel*. 6. *Abraham* offereth up his son *Isaac*. 7. Three wise men of the *East*, guided by a star, come and worship *Christ*. 8. *Joseph* and *Mary* flee away by night, upon an ass. 9. King *Herod's* cruelty; his men's spears laden with children. 10. Rich *Dives* invites his friends, and orders his porter to keep the beggars from his gate. 11. Poor *Lazarus* comes a begging at rich *Dives'* gate, the dogs lick his sores. 12. The good Angel and Death contend for *Lazarus's* life. 13. Rich *Dives* is taken sick, and dieth; he is buried in great solemnity. 14. Rich *Dives* in Hell, and *Lazarus* in Abraham's bosom, seen in a most glorious object, all in machines descending in a throne, guarded with multitudes of angels; with the breaking of the clouds, discovering the palace of the sun, in double and treble prospects, to the admiration of all the spectators.—Likewise several rich and large figures, which dances *jiggs*, *sarabands*, *anticks*, and *country dances*, between every act; compleated with the merry humours of *Sir Jno. Spendall* and *Punchanello*, with several other things never exposed. Performed by Mat. Heatly.—

VIVAT REGINA."

#### ORIGIN OF CARDS.

Cards were invented about the year 1390, to divert Charles VI. of France, who had fallen into a melancholy disposition. The inventor proposed, by the figures of the four suits or colours, as the French call them, to represent the four classes of men in the

kingdom. By the *cœurs* (hearts) are meant the *gens de chœur*, choir-men, or ecclesiastics; and therefore the Spaniards, who certainly received the use of cards from the French, have *copas*, or chalices, instead of hearts. The nobility, or prime military part of the kingdom, are represented by the ends or points of lances or pikes: The Spaniards have *espadas*, swords, in lieu of pikes; and hence we call them spades. By diamonds are designed the order of citizens, merchants, or tradesmen, *carreaux* (square stones, tiles, or the like): the Spaniards have a coin (*derieres*) which answers to it; and the Dutch use the word *strengen* (stones or diamonds), on account of the form of what is here called *carreaux* by the French. Trefle, the trefoil-leaf, or clover grass (corruptly called *clubs*), alludes to the husbandmen and peasants. The Spaniards appear to have substituted *bastos* (staves or clubs), and we too have given the Spanish name to the French figure. The four kings, which the French, in drollery, sometimes call the *cards*, are David, Alexander, Cæsar, and Charles; which names were, and still are, on the French cards. The first three of these names represent the celebrated monarchies of the Jews, Greeks, and Romans, and the last that of the Franks, under Charlemagne. By the queens are intended Argine, Esther, Judith, and Pallas (names retained on the French cards), typical of birth, piety, fortitude, and wisdom, the qualifications severally attributed to the persons named. Argine is an anagram for *regina*, a queen by descent. By the knaves were intended the servants of knights (*knave* originally meaning a *servant*); but pages and valets, now indiscriminately used by various orders of persons, were formerly only allowed to men of quality, under the name of esquires (*escuires*, shield or armour-bearers). Others suppose that the knights themselves were designed by those cards; because Hogier and Lahire, two names on the French cards, were famous knights at the time they are understood to have been introduced.

## FEASTS.

Feast, in the English church, is a word principally used in proceedings at law: thus, the four quarterly feasts, or stated times, whereon rent on leases is usually reserved to be paid, are Lady-day, or the annunciation of the blessed Virgin Mary; or 25th of March; the nativity of St. John the Baptist, held on the 24th of June; the feast of St. Michael the archangel, on the 29th of September; and Christmas, or rather of St. Thomas the Apostle, on the 21st of December. Religious, like every other description of institutions, have always had their *feasts*; but in the modern acceptance of the term, in Britain, *feasts* are nothing more than *holy-days*.

*Moveable feasts* are those which, depending on astronomical calculations, do not always return on the same days of the year. Of these, the principal is Easter, which fixes all the rest; those following at certain distances from that day, as Palm-Sunday, Good-Friday, Ash-Wednesday, Sexagesima, Ascension-day, Pentecost, and Trinity-Sunday.

*Immoveable feasts*, those which are constantly celebrated on the same day: of these, the principal are Christmas-day, or the Nativity; the Circumcision; Epiphany; Candlemas, or the Purification; Lady-day, or the Annunciation, also called the *Incarnation* and the *Conception*; All-Saints, and All-Souls, and the days of the several apostles.

In a rude age, a feast is a bond of association, that befits not only the gravest transactions of nations, but also the most solemn acts of religion; but the abuses, to which they are in all ages liable, shock a refined one: in public affairs they come to be regarded as contemptible, and in holy ones, as sacrilegious.

In reading of the antient feasts of Britain, the memory of which is so fondly preserved under the name of *old English hospitality*, we are alternately charmed with the idea of the social board, and disgusted with an expensive gluttony that could not have existed

without injury to the general body of the people. It is not the nature of the food that offends; there was no harm in serving up porpoises and seals as dainties; it is the quantity, the cost. In the days that allowed it, there must have been a difference of property between subject and subject greater than any of which we have at present an idea.

The king, and the helper in his stables, have, at this day, incomes nearer to a balance. The king that, like Edward III. should lavish 40,000*l.* upon a coronation-feast, would find his finances deranged; and what would become of an archbishop who, like Ralph the abbot of St. Augustine's, in 1309, should entertain six thousand guests at his installation, at an expence of 43,000*l.*; of an earl that, like Richard of Cornwall, covered his wedding-table with thirty thousand dishes? It cannot be interposed that the funds which supplied these excesses were maintained by frugality, or a want of excitement to expences in other branches of indulgence. These wealthy men were not so rude as to place their only pleasures in the flaggon and the dish: they pursued the more refined luxuries of dress and equipage in an equal degree. Their tables were not merely laden with heaps of food; but decorated with sumptuous utensils and delicacies, and accompanied with performers and other inventions to amuse the mind. When sixty fat oxen were consumed at a marriage-feast, or a hundred at an installation, or four hundred swans, or two thousand geese, the solid part of the provision was relieved by seven or eight and twenty thousand pasties, tarts, custards, and jellies.

Those, therefore, who will, may look back to the ages of *hospitality* with regret: but the more accurate reasoner will probably find consolation in the thought that no body of men can have the means of spreading a table for thousands, unless by causes that at the same time deprive other thousands of spreading one for themselves; and the British politician, if he cannot persuade himself to believe that the wealth of his nation has declined, will unavoidably conclude, that,

whatever may be the scene before his eyes, property has, in reality, in a degree so great as to be injured by the term comparatively, passed from the hands of the few into those of the many.

## BOTANY.

Botany teaches the natural history and intrinsic qualities of plants; and, to facilitate an acquaintance with these particulars, arranges all vegetables in classes, orders, and other subdivisions. This arrangement is called a system. Various systems, or plans of arrangement, have been from time to time proposed; but the sexual system of Linnæus is at present generally received. This naturalist has drawn a continued analogy between the vegetable economy and that of the animal; and has derived all his classes, order, and genera, from the number, situation, and proportion of the parts of fructification. In twenty-four *classes*, he has comprehended every known genus and species. In considering a plant with a view to its characteristics or distinguishing features, it is divided by Linnæus into the following parts, making so many outlines, to which the attention of the botanical observer must be directed: 1. Root; 2. Trunk; 3. Leaves; 4. Props; 5. Fructification; 6. Inflorescence. 1. The *root* consists of two parts, the *caudex* and the *radicula*. The *caudex*, or stump, is the body or knob of the root from which the trunk and branches ascend, and is either solid, bulbous, or tuberous: solid, as in trees and other examples; bulbous, as in tulips, &c. tuberous, as in potatoes, &c. The *radicula* is the fibrous part of the root, branching from the *caudex*. 2. The *trunk*, which includes the branches, is that part which rises immediately from the *caudex*, in either herbaceous, shrubby, or arborescent, and admits of several other distinctions according to its shape, substance, surface, &c. 3. The *leaves* are either *simple*, as those that adhere to the branch singly, or *compound*, as when several expand from one footstalk.

Leaves are farther described by various terms indicative of their form and outline. 4. The *props*, those external parts which strengthen, support, or defend, the plants on which they are found, or serve to facilitate some necessary secretion: as, the *petiolus*, or footstalk of the leaf; the *pedunculus*, or footstalk of the flower; the *stipula*, or husk, that is, the small leaves that generally surround the stalk at its divisions; the *cirrhus*, or tendril; the *pubes*, or down; the *arma*, or defensive weapon, as thorns. 5. The *fructification*, or mode of fruit-bearing. 6. The *inflorescence*, or mode by which the flowers are joined to the several peduncles.

The number of species of plants already known is about twenty-five thousand; and botanists suppose that double that number, at least, remain to be discovered.

#### ON BEAUTY.

Beauty, in its literal signification, is a term applied to objects of sight, but often figuratively, though improperly, used to express the effect produced by the perception of other senses, such as beautiful music, &c.

Plato gives but an obscure definition of beauty, when he says, that there are *four* characteristics of the truly beautiful; namely, *universality*, *supremacy*, *sameness*, and *immutability*: his supreme beauty, therefore, ought to possess *truth*, *power*, and *goodness*.

Hogarth, who was both an artist and a philosopher, lays down the following principles which constitute elegance and beauty: *fitness*, *variety*, *uniformity* (as corresponding to a certain end or purpose), *simplicity*, *intricacy*, and *quantity*:—the explanation would be too tedious.

According to Burke, beauty is not the creature of reason, but a merely sensible quality, acting *mechanically* upon the human mind, by sensation. His beauties, consequently, must possess: 1. Comparative



*Smallness*; 2. *Smoothness*; 3. *Variety* in the conformation of parts; 4. These parts must not be angular, but melted, as it were, into each other; 5. A delicate frame, with an appearance of agility, rather than strength; 6. Colours clear and bright, but very strong and glaring; or, 7. If the latter be the predominant colours, they ought to be diversified with others.

Professor Kant's definition is perhaps more satisfactory, though it can only be clearly understood by apposite comparative illustrations: he says, "Beauty is the *regular* conformation of an object of Nature or Art, in which the mind, *intuitively*, perceives this conformation, without reflecting upon its *ultimate* design or purpose."—The *beautiful*, as well as the *sublime*, produces a pleasing effect, but in a very different manner: thus, a view of mountains, with their summits covered with snow, or enveloped in clouds; a description of a violent storm, or Milton's picture of the infernal regions, affords a satisfaction mingled with terror: on the other hand, a prospect of flowery meadows, valleys intersected with serpentine rivulets, and enlivened by flocks; the description of Elysium by Virgil, or of the enchanting Cestus by Homer, afford both satisfaction and pleasure. But, in order to feel the impression in its full extent, we must first be susceptible of the sublime, before we can enjoy the beautiful.—Lofty oaks, and the solitary shades of the grove, are *sublime*; flowers, young hedges, and trees in a flourishing state, are *beautiful*; the starry heavens, and the obscurity of night, are sublime; the brightness, or serenity of day, is beautiful.

*Personal beauty* may be reduced to four heads: *colour*, *form*, *expression*, and *grace*. Colours please by opposition, and it is in the face that they are more diversified and exposed. The reason why they please, arises less from their natural liveliness, and their being properly blended, than from the idea they present to the mind of the perfect health of the object. The beauty of form includes the symmetry of the whole

body, even to the turn of the eye-brow, or graceful flow of the hair. Hence, an union and harmony of all parts of the body, is the general cause of beauty; and, while the peculiar beauty of the female form is delicacy and softness, that of the male is apparent strength or agility.

*Expression* is the effect of the passions on the muscles of the human countenance, and the different gestures. The finest union of passions is a just mixture of modesty and sensibility. Indeed, all the benign affections, such as love, hope, joy, and pity, add to beauty, while the predominance of hatred, fear, or envy in the mind, deform the visage.

*Grace* is the noblest part of beauty. The mouth is the chief seat of grace, as the expressive beauty of the passions is principally in the eyes. There is no grace without motion, nor can impropriety be united with grace. Lord Bacon says "In beauty, that of favour is more than that of colour; and that of gracious and decent motion, more than that of favour."

With regard to the final cause of beauty, our taste for regularity, order, and simplicity, contributes to our happiness; and, as beauty is frequently connected with utility, it is highly conducive to improvements in agriculture, architecture, and manufactures.

It also concurs in an eminent degree with mental qualifications, in promoting social intercourse, and forming connections among individuals in society.

*Moral beauty* may be defined to consist in that uniform conduct, which, independently of personal interest or advantages, is influenced by no other consideration than that of conscious rectitude. Hence it cannot be applied to a man who acts virtuously, because he is rewarded, and finds no inducement to vice;—nor to persons who are deterred from the commission of crimes, by the apprehension of punishment, whether temporal or eternal.

## ON THE ORIGIN OF GOVERNMENT.

In disquisitions respecting matters of remote antiquity, historical facts are involved in obscurity ; and, as in the infancy of man, no recollection can be had of the ideas that first began to dawn upon the mind ; so neither can we trace, to their origin, in the infancy of societies, the customs that then began to prevail. In respect to the origin of such customs, therefore, we must be satisfied with conjecture and reasonings from analogy with regard to cases in some respects similar, that have fallen under our own observation. Yet so strong is the influence of custom and habit, when once established on the actions of men, that it is of much importance to discover, as early as possible, those national ideas which had begun to take place ; for we shall find, that those original notions continue to influence the conduct of mankind, long after they had been forced by a change of circumstances to adopt so many modifications of these as to make the ideas which now prevail seem to bear but a very slight resemblance to those from which they were derived.

It is upon these principles that we shall endeavour to take here a slight view of societies in their origin, in order to discover the nature and the causes of their earliest civil institutions, and to point out some of the circumstances that have operated in producing the changes that have taken place.

*The Patriarchal State.*

We can form no idea of the existence of man in society without subordination.—A child is no sooner born than it is perfectly dependent upon its parents for its support, and every thing it enjoys ;—it is weak and helpless ; it looks up to them for assistance, and nature has bestowed upon the parents affections that induce them to cherish and support it.—It is wayward and foolish ; nature has also endowed them with

strength to correct its errors.—Reason comes gradually to be developed.—The child becomes sensible of the superior understanding that experience has conferred upon its parents, and, though at first, it submitted merely from necessity, it at length yields to their authority from a conviction of its propriety and utility.—This conviction, as the bodily powers encrease, and the understanding improves, is strengthened by habit and motives of gratitude.—Compulsion is then out of the question; and as society advances, it is from the sway that reason, derived from experience, confers upon him that the patriarch commands respect over his descendants, when they have obtained families of their own, and have acquired ideas of personal independence, his *advice* will be attended to when his *commands* can be no longer obligatory; and when, from the effects of age, he becomes debilitated in body and in mind, he will still be treated with respect, from a gentle recollection of what he has been. Such is the natural progress of patriarchal regimen;—the first which must have prevailed in every society, and what must have given the earliest idea of government in every country on the globe.

*Origin of national Assemblies.*

Here, as in every thing respecting man, the origin of influence is merely *necessary* and *casual*, and nothing *conventional*. *Necessity* lays the foundation, and *accidental circumstances* influence the superstructure. At the beginning, no idea is formed of the magnitude that the object may in time acquire;—provision is made for circumstances as they arise;—and reason and experience model it so as to suit the wants or desires of the parties concerned. Men being accustomed to venerate their parents, are naturally disposed, in the infancy of every small society, to pay respect to the opinion and advice of their elders;—hence the origin of assemblies, casually convened for deliberating on matters of great importance. The elders, in such assemblies, usually bear sway, as to advice. The senate of Rome remained, till the very

last, the name of *Patres*, so that the whole order of senators were called *Patricians*. The younger and most vigorous are empowered to act under the general direction of the whole body, swayed by the opinion of the elders. In these first assemblies we can perceive no mark of compact, nor any other authority than that which a general assembly, without any previous deliberation, confers ; nor any idea of its continuance, longer than that opinion prevails.

*Origin of regal Authority.*

Extraordinary talents, however, and uncommon exertions, especially in warlike exploits, will always inspire the bulk of such a people with respect and admiration, and consequently will confer upon the person who possesses those qualities, in a high degree, a singular sway over others, who without any deputation to that effect, venerate him, and are influenced by his will. *They* are pleased, and *he* acquires a sway proportioned to the general opinion entertained of his prowess. Their subjection is voluntary ; and they submit to it as long as they feel themselves inclined to do so, and no longer.

But if men have been accustomed, for a time, to view another as greater than themselves, they thus imperceptibly lose the idea of equality. The longer this person is capable of securing this sway, the more they admire him, and sink themselves in their own opinion. He comes, in time, to be thought of a superior nature. His near connections participate, in some degree, of the respect paid to him. His family becomes elevated above others ; and thus in time is formed, without foreseeing it, and without concert of any sort, a distinction of ranks, which gradually gives rise to hereditary authority and despotism.

Having given this short sketch of the rise of personal rank and hereditary authority, we shall next endeavour to trace, with somewhat more discrimination, the modifications of that authority in different stages in the progress of civil society.

In the progress from rudeness to refinement in so-

ciety, there are three stages that are distinctly marked. In the first, men subsist on the spontaneous productions of the earth, and the wild animals they can destroy. Men in this state of society are *Hunters*.

Man gradually acquires a dominion over some of the most gentle animals, tames them, and feeds them for his own use. He lives upon the milk of his flocks, clothes himself with their skins, and eats their flesh when other provisions fail. This state of society is called the *Pastoral*.

In time, however, they learn to cultivate the fruits of the earth, and to make these subservient to their own use, both immediately by furnishing food to themselves, and mediately by affording meat to beasts fit for the sustenance of man. This state of society has been denominated the *Agricultural*.

Each of these stages of society give rise to particular notions and institutions; and as men in society always advance through these stages in the order above enumerated, the ideas and habits that had become familiar in the one state, continue to form the basis, and have a great influence on those of the succeeding period. It is necessary for us, therefore, if we wish to acquire a just notion of the political institutions that now prevail, to trace their progress from the first period to the present times.

#### *Hunters.*

While men continue to be *hunters* only, their civil government will be of the rudest kind; and, of course, every head of a family will be then in a great measure independent. Assemblies of the people, however, must be called, to deliberate on national affairs, and to provide for the common defence of the whole tribe, when danger threatens them. In these assemblies, age will obtain a voluntary respect, and personal prowess and daring intrepidity will be admired, as constituting superior excellence. In this state of society, the idea of *country* strongly prevails. In cases of danger they find it necessary to associate for mutual defence. Extent of territory is, to men in these

circumstances, extremely necessary. An idea of property in territorial possession therefore takes its origin here;—but this idea of territory is only connected with the nation, or the tribe. As no individual could make use of a small spot for his own wants, he is satisfied if the hunting grounds he values most belong to his tribe; he has no wish to annex any part of it to his own person:—therefore, in this state of society, the idea of *personal property in land* has not yet originated; and of course all the intricacies, in respect to civil government, which this engenders, and the disputes these give rise to, are entirely obviated.

#### *The Pastoral State.*

As men come gradually to tame animals, and pass into the state of pastors, the notion they had already imbibed, with regard to territorial property, continues to operate; but new institutions become necessary. It is not enough that the territory belongs to the tribe. In this case it becomes necessary, when they stop from any migratory journey, in quest of pastures, by some conventual agreement, to distribute the land to individuals in such lots as may be found necessary to preserve peace and order among them. Here every man acquires, by degrees, a notion of personal property in land; but in this case his connection with that land is very slight:—he considers it as his property only so long as till the crop upon it, at the present time, be consumed. After that is done, he relinquishes it, and goes in quest of fresh pastures elsewhere, within the territories of the state. In this situation, therefore, the idea that land is entirely the property of the state, still prevails; but individuals consider themselves as entitled to make use of its produce exclusively, for a time.

#### *Agriculturists.*

In temperate climates, where the surface of the country is diversified with hill and vale, and where fruits in abundance for man, and herbage for cattle, are to be found at all seasons, we can easily conceive

an idea that communities may continue to exist, for many ages, in this migratory state, without ever acquiring any idea of personal property in land. But in less temperate climates that cannot be the case. There, the fruits that nature spontaneously produces are less abundant, and are to be found only at one season of the year. The herbage for cattle also fails entirely for a time, and the rigour of the winter's cold is such as to render the poor protection of a tent inadequate for affording the shelter required. To guard against this cold, and to provide places for storing up such fruits for himself, and provender for his cattle, as he can collect during the summer, more solid and permanent habitations become necessary for man. He builds himself a hut, and covers it in the most durable and effectual manner he can;—this he effects with no little labour to himself;—and having once reared, he becomes unwilling to abandon it.—He considers this therefore as his own, and thus gradually begins to acquire some slight notions of fixed personal property in land.

When he has thus attached himself to a place of fixed residence, he will endeavour to render it as commodious to himself as possible. He finds some plants afford him a more agreeable repast than others;—he tries to cultivate them by art:—to prevent these plants from being destroyed by cattle the ground must be inclosed:—within this inclosure he finds he can cultivate grain, which may be stored up for his own use, and that of his cattle, in winter. He therefore acquires as great a fondness for this bit of inclosed land as for his house. “This is mine,” he says, “and I will preserve it.” The idea accords with the general sense of men;—the community pronounce it reasonable, and decree, by a tacit consent, that it shall be his, and in the use of it he is protected by universal custom, which gradually forms the basis of law. Of this kind of territorial property we find mention made by Tacitus, and all the earliest Roman historians who have treated of Germany, under the name of the *field of the house*. Here too we have the origin of that



kind of landed property which was afterwards known by the name of *Allodial*, in distinction to those feudal tenures which came into use at a later period of society in Europe. This kind of *Allodial property*, to which the owner claims no other title than that of possession, acquired by transfer from another, or descent, is known till this day in the Shetland isles, that lie off the N. E. coast of Scotland, under the name of *Udal* property; a kind of tenure that probably once prevailed over all Scotland, though the name of it be now lost in our law books.

In a former part of this work we have endeavoured to trace the origin of feudal tenures, &c. in Europe.

### ON ASTRONOMY.

In every age and country, astronomy has engaged the attention of mankind: and who, indeed, can behold the "dread magnificence of heaven," a magnificence that continually increases on the eye that surveys it, without feeling the most earnest solicitude to learn every thing respecting it, that the powers of his mind can discover? "I saw the stars," says the *Paria* of *Saint-Pierre*, "I saw the stars rising from the east in endless succession; and I felt that nature, who has linked the lot of man with so many invisible objects, has surely given him a relationship to those that present themselves to his eyes!" And we are connected with this scene! from it we receive not only the sublimest, but the clearest conceptions of creation, and its Creator! Nor does its vastness oppress us: let us watch the impression it makes, and observe whether it does not rather prompt us "to claim a kindred with the skies?" What a melancholy thought would it be, did we look at the stars, and believe that they should continue to revolve through an eternity, after ourselves were lost in nothingness! but this is not the spontaneous, and therefore not the instinctive, feeling of man. On the contrary, how natural, how congenial, to the heart, is the exclamation of Fingal: "When thou, sun of heaven, shalt fail—if thou shalt

fail, thou mighty light,—if thy brightness is for a season, like Fingal,—our fame shall survive thy beams !”

He that has made himself acquainted with astronomical facts, is enabled to behold, with the mind's eye, a prospect in which this our globe forms but a small part indeed ! and it is impossible to think justly on those three great objects of all thought,—Man, the World, and the Deity,—without beginning at this point. The low theology of the ancients arose out of astronomical ignorance. To their eyes, the earth was a plane : beneath its surface were the abodes of the dead ; above it, rose the vaulted skies, at once a canopy to men, and a flooring to the gods. The shining stars ornamented the heavens, as the flowers did the fields. Observe, the world was not a part, but the centre of a system. With some of the more metaphysical teachers, heavens were raised above heavens ; and, it must be allowed, that in proportion as his seat was raised, the idea entertained of the Supreme, became more abstract and sublime. Still, however, the sole object of divine solicitude was the world : the world was not a part, but the whole.

But what are our conceptions ? Reclined upon the green surface of the earth, as a mariner upon the side of a vessel, we look at once into the ocean of universal space. We suppose this space unbounded ; because, with the idea of boundaries we must connect that of something beyond those boundaries, and this can be nothing but a recommencement of space. We consider ourselves as resting upon a body which is continually turning round, and to which we adhere by the unalterable nature of matter. We reflect that if a bird, or a balloon, *could* rise to the height at which the attractive influence of the earth ceases, it must fall into the void. We reflect that, could we divest ourselves of matter, we should be released from that power by which we are chained to the earth ; and having supposed this alteration, we may please ourselves with the thought of our liberty, or trembling, that as the world turns round we shall drop from it.

into the dark and chill space that we conceive unbounded. From this reverie, let us turn to the view of creation: we are aware that the planet in which we live is surrounded by exhalations, or light particles of itself, which form what is called its atmosphere. This atmosphere, though light and fluid, is material, and compounded of the very elements that, in a compacted state, form the sod on which we tread. We perceive, then, that we are surrounded by matter. That, to-us-viewless fluid, in which we breathe and move, is as absolutely a body as water, and as essential to our existence, as is water to that of fish. But this material atmosphere extends only to a certain distance round the surface of the earth. Beyond this, commences a space of the nature which we can give no account, but which some philosophers have supposed a sea of ether, and in which we must conclude that neither animals nor plants can live. This is that space in which the stars are placed.

The stars are supposed to be centres of systems, that is, points, round which their attending planets revolve; suns, by whose power those planets are enlightened and warmed: and are not these stars, in their turn, but parts of still larger systems? Is there not a point round which they, with all their worlds, in harmonious order, revolve, and which is to them a sun?

Imagination, tutored by astronomy, might here place the abode of God. Beyond a doubt, there is a physical, a mechanical, centre of the universe: for surely the stars are upheld in heaven by the same law of attraction through which the planets are supported by the stars. Did a star cease to attract its planets, they must fall till they came within the reach of the next attracting centre; and it is only by attraction that the stars themselves are retained in their quarters of the heavens. Imagine, then, all constellations revolving round one point: see them advance in splendid and solemn procession! and where, with more sublimity than in that commanding station, can the theologist

place the all-disposing mind? Where can the poet and the painter, with more grandeur, place that throne before which universal nature is prostrate, and whence life and all its enjoyments are dispensed?

But whatever metaphysical creed we may adopt, we have, at least, obtained a comprehensive view of creation. We have ascertained the place and magnitude of a world that is and must be so very interesting to us; and we are enabled, by regular induction, to make some estimate of our own.

Such is the philosophical value of astronomy. Its great practical use is in navigation and geography: by their bearings with respect to the celestial bodies, the situation of places is described, and their relative distances determined.

### GEOGRAPHY.

The fundamental principles of Geography are the spherical figure of the earth, its rotation on its axis, its revolution round the sun, and the position of the axis or line round which it revolves, with regard to the celestial luminary; whence it follows that astronomy is the key of all geographical knowledge.

According to the most approved calculations which have yet appeared, the dimensions of the earth are as follow:

*English square miles.*

Circumference .....	24,930
Diameter .....	7,935 $\frac{2}{3}$
Semi-diameter .....	3,967 $\frac{1}{2}$
Superficial measure .....	200,000,000
Solid contents .....	266,000,000,000

Dr Brakenbridge reckons thus:

*Square miles.*

Surface of water .....	123,636,819
Surface of land .....	74,182,331
Total surface .....	197,819,150

From the land he deducts one third as waste, leaving 49,154,887 square miles, or 31,651,127,680 acres of fertile ground; and dividing the number of acres by 400,000,000, which he supposes to be that of the human race, he finds that there are 79 for each.

Of the number of mankind, however, opinions have differed widely, as, indeed, on such a subject, might be expected. Beneath are the names of the several calculators, and the estimates they have given:

Riccioli.....	1,000,000,000
Journalists of Trevoux.....	720,000,000
Vossius.....	500,000,000
Teller.....	370,000,000

Assuming 720,000,000 as the most probable number, the age of the world as that of 6006 years, and the generations of men in that space of time as 182, it has been farther reckoned that 131,040,000,000 is that of all the human beings that have existed.

An estimate, in another form, states the surface of the earth as follows:

	<i>Square miles.</i>
Europe.....	4,456,005
Asia.....	10,768,823
Africa.....	9,654,807
America.....	14,110,874
	<hr/>
	38,990,569
Seas and unknown parts ....	160,522,026
	<hr/>
Total surface .....	199,512,595

In general terms, the earth is termed a perfect sphere, in which case, the diameter from north to south would be precisely equal to the diameter from east to west; but it having been found that the latter exceeds the former by 36 miles, the shape of the earth is more truly denominated an oblate spheroid; by

which is to be understood a globe, the upper and lower parts of which are flattened

When any portions of the heavens are called the right or left, the expression is to be understood according to the position of the person by whom it is used : because, according to that, his face is supposed to be turned toward a certain quarter. A geographer is conceived to stand with his face to the north, because the northern part of the earth is best known ; an astronomer looks toward the south, to observe the celestial bodies as they approach the meridian ; the antient augurs, in observing the flight of birds, looked toward the east, while the poets turned to the *Fortunate Isles* : in books of geography, therefore, by the right hand we must understand the east : in those of astronomy, the west ; in such as relate to augury, the south ; and, in the writings of the poets, the north.

Agreeably with these observations, the upper part of a map is the north ; the lower, the south ; the right-hand the east ; and the left the west.

### AURORA-BOREALIS.

The Aurora-Borealis is a meteor appearing in the northern part of the heavens. It is most frequent and most brilliant during the winter solstice. In the Shetland islands, the *merry dancers*, as they are there called, are the constant attendants of clear evenings, and cheerers of the long winter nights. In still more northern countries, as Norway, Lapland, and Siberia, they greatly enliven the snowy landscapes. They commonly appear at twilight, near the horizon, of a dun colour, approaching to yellow ; sometimes continuing in that state for several hours, without any sensible motion ; after which they break out into streams of stronger light, spreading into columns, and altering slowly into a thousand different shapes, varying their colours from all the tints of yellow to the obscurest russet. They often cover the whole hemi-

sphere, and then make the most splendid appearance. Their motions, at all these times, are amazingly quick; and they astonish the spectator with the rapid change of their form. They break out in places where none were seen before, skimming briskly along the heavens, and are suddenly extinguished; leaving behind them a uniform dusky track. This is again illumined in the same manner, and as suddenly left a dull blank. In certain nights, they assume the appearance of vast columns, on one side of the deepest yellow, on the other declining away till it becomes undistinguished from the sky. They have generally a strong tremulous motion from the end, which continues till the whole vanishes. In a word, we, who only see the extremities of this northern phenomenon, have but a faint idea of their grandeur or their motions. According to the state of atmosphere, they differ in colour: they often put on that of blood, and make an awful appearance. It need not be added, that these are among the occurrences of nature at which the ignorant tremble.

With regard to the cause of the aurora-borealis, many conjectures have been formed. 1. The first which naturally occurred was, that it resulted from the ascent of inflammable sulphureous vapours from the earth. 2. Dr. Halley, who was unacquainted with the electric power, supposed that this earth was hollow, having within it a magnetical sphere corresponding in virtue with all the natural and artificial magnets on the surface; and that the magnetic effluvia, passing through the earth from one pole of the central magnet to the other, might sometimes become visible in their course, and thus exhibit the beautiful coruscations of the aurora-borealis. 3. "Is not the aurora-borealis," says Mr. Canton, "the flashing of electrical fire from positive toward negative clouds at a great distance, through the upper part of the atmosphere, where the resistance is least?" 4. Mr. Mairan supposed this phenomenon to proceed from the atmosphere of the sun, particles of which were thrown off by the centri-

fugal force, acquired by his rotation on his axis ; and that these particles falling upon the atmosphere of the earth near its equatorial parts, were from thence propelled by the diurnal motion of the earth toward the polar regions, where they formed the aurora-borealis. 5. M. Bernardin de St. Pierre imagines the atmospheric refraction of the beams of the sun from the ice of the poles, to produce these coruscations. 6 It is now generally thought that this is one of the multi-form appearances of the electric fluid ; but the precise manner of its operation is by no means settled. From the observations of Mr. Foster in the southern hemisphere, it is received as an established fact, that the course of these flashes is directed from both poles toward the equator. May it be conjectured that the rare state of the atmosphere at the poles, is itself the cause of this phenomenon? or that it is the cause of the visibility of a process which is performed everywhere? or, to explain why the electricity of those parts of the atmosphere should be constantly found to direct its course from the poles toward the equator, and not from the equator to the poles, may we suppose that it is to return to the equator of the electric fluid drawn during the day to the polar regions ?

### HINTS ON ECONOMY.

Remember that time is money. He that can earn ten shillings a day by his labour, and goes abroad, or sits idle one half of that day, though he spends but sixpence during his diversion or idleness, it ought not to be reckoned the only expence ; he hath really spent or thrown away five shillings besides.

Remember that credit is money. If a man lets money lie in my hands after it is due, he gives me the interest, or as much as I can make of it during that time. This amounts to a considerable sum, if he has good and large credit, and makes good use of it.



Remember that money is of a prolific and generating nature. Money can beget money, and its offspring can beget more, and so on. Five shillings turned, is six shillings; turned again, is 7s. 3d., and so on till it becomes 100l.; the more there is of it, the more it produces every turning, so that the profits rise quicker and quicker. He that kills a breeding sow, destroys all her offspring to the thousandth generation. He that murders a crown, destroys all it might have produced, even scores of pounds.

Remember that six pounds a year, are but fourpence per day. For this little sum, which may be daily wasted in our expence unperceived, a man of credit may, on his own security, have the constant use and possession of 100l. So much in stock briskly turned by an industrious man, produces great advantage.

Remember this saying, "That the good paymaster is master of another man's purse." He that is known to pay well, that is punctually and exactly to the time he promises, may, at any time, and on any occasion, raise all the money that his friend can spare. This is sometimes of great use. Therefore never keep borrowed money an hour beyond the time you promised, lest a disappointment shut up your friend's purse for ever.

The most trifling actions that affect a man's credit ought to be regarded. The sound of a hammer at five o'clock in the morning, or nine at night, heard by a creditor, makes him easy six months longer.

But if he sees you at a billiard-table, or hears your voice at a tavern, when you should be at work, he sends for his money the next day.

Finer cloaths than he or his wife wears, or greater expence in any particular than he affords himself, shocks his pride, and he duns you to humble you. Creditors are a kind of people that have the sharpest ears, as well as the best memories of any in the world. Good natured creditors (and such one should always choose to deal with) feel pain when they ask for

money. Spare them that pain, and they will love you. When you receive a sum of money, divide it equally among them in proportion to your debts.

Don't be ashamed of paying a small sum because you owe a greater. Money, more or less, is always welcome; and your creditor will rather be at the trouble of receiving 10*l.* voluntarily brought him, though at ten different times or payments, than be obliged to go ten different times to demand it, before he can receive it in a lump. It shews that you are mindful of what you owe, it makes you appear a careful, as well as an honest man; and that still increases your credit.

Beware of thinking all your own you possess, and of living accordingly. 'Tis a mistake that many people who have credit fall into. To prevent this, keep an exact account for some time of both your expences and incomes. If you take pains at first to mention particulars, it will have this good effect: You will discover how wonderfully small trifling expences mount up to large sums; and would discern what would have been, and may for the future be saved, without occasioning any great inconvenience. In short, the way to wealth, if you desire it, is as plain as the way to market. It depends chiefly on two words, *Industry* and *Frugality*; i. e. waste neither your time nor your money, but make the best use of both.

He that gets all he can, and saves all he gets (necessary expences excepted) will certainly become rich.

If that Being who governs the world, in whom all should look for a blessing on their honest endeavours, doth not in his wise providence otherwise determine.

### ORIGIN OF REMARKABLE PHRASES, CUSTOMS, &c.

*To throw the Gantlet.* This phrase signifies "to challenge" or "defy." The expression derives its origin from the days of chivalry, when he that challenged an opponent in the lists threw down his glove, and he that accepted a challenge took it up.

The word *gantlet* is French, and comes from *gant* or *gant*, "a glove." The gantlet was made of iron, and the fingers were covered with small plates. The gantlet itself was not in use before the thirteenth century.

*To run the Gantlope*, commonly expressed to *run the gauntlet*, and signifying, primarily, a certain military punishment, and, figuratively, the passing through difficulties. According to the erroneous pronunciation, the hearer who compares this phrase with that which is the subject of the preceding article, is much at a loss what to understand by the word *gantlet*. The real words are these: "To run the Ghent-race." *Ghent*, *Gaunt*, or *Gant*, is a well-known town in Flanders; and *loop*, in the Belgic, signifies a *race*. The gantlope, or Ghent-race, so called because invented at that place, is this: in the land-service, when a soldier is to be punished in this manner, the regiment is drawn out in two ranks, facing each other, and each soldier having a switch in his hand, lashes the criminal as he runs along naked from the waist upward; in the navy, the whole ship's crew is disposed in two rows, standing face to face on both sides of the deck, so as to form a line whereby the delinquent may go forward on one side, and return aft on the other, and each seaman, being furnished with a small twisted cord, strikes him as he passes.

*Hob-nob*, or *hab-nab*, a cant phrase, derived from *hap ne hap*, or "happen what may."

*Hobson's Choice*, is an expression used to denote "no choice at all." This proverb originated at Cambridge; where, in the beginning of the seventeenth

century, one Thomas Hobson, a carrier, was accustomed to let saddle-horses to the scholars; and who, desirous that every horse should have its proper share of rest, would never allow one to be hired out of its turn. His inflexibility often clashed with the whims of his customers; but he was positive; they must either take the horse he was willing to let, or go without any; whence the saying, "Hobson's choice: this, or none." Hobson's conduct, in this branch of his profession, evidently marked a degree of character; but his celebrity does not rest here. At his sole expence, he brought an aqueduct into the town of Cambridge; and, in 1614, erected a stone conduit, which, after his death (1630), received an inscription commemorating the benefaction.

*Hocus-pocus*, a cant expression used by jugglers. According to some, it is derived from the words *hoc est corpus* ("this is the body"), which occur in the celebration of mass; where the bread is said to be changed into the body of Christ. Bailey deduces it from the French *hocher*, "to shake," and *pocher*, "to poke."

*Basket-making*. Returning to the old trade of basket-making, is said to have originated from the ingenuity of the ancient Britons in making baskets, which they exported in large quantities, and implies sliding back into old habits, or returning to the more primitive occupations of barbarous ages.

*Black-book*, was a book kept by the English monasteries, in which a detail of the scandalous enormities practised in religious houses were entered, for the inspection of visitors under Henry VIII. in order to blacken them, and hasten their dissolution. Hence the vulgar phrase, "I'll set you down in my black-book."

## PART II.

CONTAINING

GENERAL RULES FOR THE RESTORATION AND  
PRESERVATION OF HEALTH, &c. &c.

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THE enjoyment of "a sound mind," in a healthy body, being the greatest of earthly blessings, a portion of the time and industry of every rational being ought to be employed in the acquisition of so desirable a state. For this purpose, nothing is more essential than a proper knowledge of the various branches of animal economy, by the assistance of which we are not only enabled to preserve ourselves in perfect health, but to remove, and frequently to obviate, the attack of many disorders to which we are liable, and which, from our ignorance and mismanagement, might otherwise be productive of the most fatal consequences.

Animal economy, therefore, ought certainly to form part of a liberal education. It is not, however, necessary, nor is it convenient, that all persons should be minutely instructed in the more abstract and difficult branches of medical or anatomical science; but an acquaintance with such familiar and practical parts as are of general use and application, should never be superseded by other less serviceable pursuits.

Hence we are induced to explain, and analyze, in this volume, many subjects, though apparently remote from its original design, yet so intimately connected with the physical prosperity of the individual, that an omission of such articles would be irreconcilable to our chief aim—that of exploding hurtful prejudices, and communicating useful information.

## EXERCISE.

Exercise may be defined such an agitation of the body as is conducive to health. Walking is the most gentle species of exercise. It promotes perspiration, and, if not continued too long, invigorates and strengthens the system. As the most simple and wholesome drink, namely water, is within every body's reach, so this species of simple and wholesome exercise is in every body's power who has the use of his limbs. To such as can bear it, walking frequently up hill is recommended. The inhabitants of mountainous countries are generally healthy and long-lived. This is commonly attributed to the purity of the air in such places: yet the frequent and necessary exercise of climbing mountains, which these people undergo, adds much to their health and longevity. Every one knows how much walking up a hill tends to create an appetite. This depends upon its increasing the insensible perspiration:—an excretion with which the appetite, and the state of the stomach in general, are much connected. Running is too violent to be used often, or continued for any length of time. The running-footmen in all countries are short-lived:—Few of them escape consumptions, before they arrive at their 35th year.—Sweating and perspiration have been found to be incompatible:—The former always suppresses the latter. Dancing is a most salutary exercise. Fencing calls forth most of the muscles into exercise, particularly those which move the limbs. The brain is likewise roused by it, through the avenue of the eyes; and its action, as in the case of music, is propagated to the whole system. It has long been a subject of complaint, that the human species has been degenerating for these several centuries. When we see the coats of mail of our ancestors, who fought under the Edwards and Henries of former ages, we wonder how they moved, much more how they achieved such great exploits, beneath the weight of such massy coverings. We grant that rum, tobacco, tea, and some other luxuries of modern invention, have had a

large share in weakening the stamina of our constitutions, and thus producing a more feeble race of men; yet we must attribute much of our inferiority in strength, size, and agility, to the disuse which the invention of gun-powder and fire-arms has introduced of those athletic exercises, which were so much practised in former ages, as a part of military discipline. Too much cannot be said in praise of swimming. Besides exercising the limbs, it serves to wash away the dust which is apt to mix itself with the sweat of our bodies in warm weather. Bathing and swimming, frequently in the summer season, is strongly recommended: but not too long a stay in the water at one time, lest, instead of increasing the vigour of the constitution, it be lessened. To these species of exercise may be added skating, jumping, the active plays of tennis, bowles, quoits, golf, and the like. Talking—reading with an audible voice—singing and laughing—all promote the circulation of the blood through the lungs, and tend to strengthen these important organs, when used in moderation. The last has the advantage over them all, inasmuch as the mind co-operates with it. “May unfading laurels,” says a writer on this subject, “bloom to the latest ages upon the grave of him who said, that, ‘every time a man laughs, he adds something to his life.’”

These exercises should be varied according to age, sex, temperament, climate, and season. Young people stand in less need of exercise than old:—women less than men. The natural vigour of their constitution is such, that they suffer least from the want of it. This will explain the meaning, and shew the propriety of an opinion of Rousseau, who says, that ‘Women only should follow those mechanical arts which require a sedentary life.’ But again, a man who is phlegmatic requires more frequent and violent exercise than he who is of a bilious constitution; and, lastly, people in warm climates and seasons require less than those who live in cold. As providence, by supplying the inhabitants of warm climates with so many of the spontaneous fruits of the earth, seems to have intend-

ed they should labour less than the inhabitants of cold climates ; so we may infer from this, that less exercise, which is only a substitute for labour, is necessary for them. The heat of such climates is sufficient of itself to keep up a regular and due perspiration. It may be observed, that the longest-lived people are to be found in warm climates. The coldness of northern climates, from the vigour it gives to the constitution, prompts to all kinds of exercise, which are not always restrained within proper bounds. These, when used to excess, wear out the body. The inhabitants of warm climates being less prompted to these things, their bodies continue longer unimpaired. The exercises hitherto mentioned may be termed active ; the next are those of a passive nature. These are proper chiefly for valetudinarians. The life of a sailor is environed with so many dangers, that heaven has, in compensation for them, connected with it an exemption from many diseases. The exercise of SAILING is constant. Every muscle is occasionally brought into exercise, from the efforts we make to keep ourselves from falling. These efforts continue to be exerted by the oldest sailors, although the consciousness of the mind in these, as well as in many other actions we perform, is not observed from the influence of habit. By means of this regular and gentle exercise, the blood is moved in those small capillary vessels, where it is most apt to stagnate, and perspiration is increased, which is carried off as fast as it is discharged from the body, by the constant change of atmosphere in a ship under sail. Nothing is here said of the benefit of the sea air, that being entirely negative. Its virtue, both at sea and on the sea-shore, consists in nothing but its being freed from those noxious animal and vegetable effluvia which abound in the air which comes across land. Sailing is recommended to consumptive people, especially to such as labour under a spitting of blood. Dr. Lud observes, that, " out of 5741 sailors who were admitted into the naval hospital at Haslar, near Portsmouth, in two years, only 360 of them had consumptions,



and in one fourth of these it was brought on by bruises or falls." In the same number of hospital patients, in any other situation, six times that number would probably have been consumptive—so much does the gentle exercise of sailing fortify the lungs against all accidents, and determine the quantity and force of the fluids toward the surface of the body.

Riding in a chariot has but few advantages, inasmuch as we are excluded from the benefit of fresh air; an article, upon which the success of all kinds of exercise in a great measure depends. It should be used only by such persons as are unable to walk or to ride on horseback. It is to be lamented that those people use this mode of exercise the most who stand in the greatest need of a more violent species.

Riding on horseback is the most manly and useful species of exercise for gentlemen. Bishop Burnet expresses his surprize at the lawyers of his own time being so much more long-lived (*cæteris paribus*) than other people, considering how much those of them, who become eminent in their profession, are obliged to devote themselves to constant and intense study; and he attributes it entirely to their *riding* the circuits so frequently, to attend the different courts in every part of the kingdom. Riding may be varied according to our strength, or the nature of our disorder, by walking, pacing, trotting, or cantering our horse. All those diseases which are attended with a weakness of the nerves, such as the hysteric and hypochondriac disorders, which show themselves in a weakness of the stomach and bowels, indigestion, low spirits, &c. require this exercise. It should be used with caution in the consumption, and should never be violent, nor continued too long at a time. In riding to preserve health, eight or ten miles a day are sufficient to answer all the purposes we would wish for; but in riding to restore health, these little excursions will avail nothing. The mind, as well as the body, must be roused from its langour. In taking an airing, as it is called, we ride over the same ground for the most part every day. We see no new objects to divert us,

and the very consideration of our riding for health sinks our spirits so much, that we receive more harm than good from it. Upon this account long journees are recommended to such people, in order, by the variety or novelty of the journey, to awaken or divert the mind. Many have by these means been surprised into health. Persons who labour under hysteric or epileptic disorders should be sent to cold climates; those who labour under hypochondriac or consumptive complaints should visit warm.

With respect to the attention to exercise that should be recommended to those of studious habits, it is very generally observed that, how agreeable soever they may be to the mind, they are very far from being equally salutary to the body. The delicate springs of our frail machines lose their activity and become enervated, and the vessels choked with obstructions, when we totally desist from exercise, and the consequences necessarily affect the brain: a mere studious life is therefore equally prejudicial to the body and the mind. The limbs, under such circumstances, become stiff; an awkward manner is contracted; and a certain disgustful air attends every action. An inclination to study is highly commendable; but it ought not to be carried to the extent of aversion to society and motion. The natural lot of man is to live among his fellows; and whatever may be his situation in the world, there are a thousand occasions wherein he must render himself agreeable; to be active and adroit; to dance with grace; to command the impetuous steed; to defend himself against an enemy; to preserve his life by dexterity, as by leaping, swimming, &c. Many rational causes have therefore given rise to the practice of particular exercises; and those legislators who deserve to be called the most sagacious and benevolent, have instituted opportunities for enabling youth who devote themselves to study, to become expert, also, in laudable exercises.

“ We shall walk, run, dance, swim, fence, sail, and ride to little purpose (says Dr. Tissot), unless we make choice of an agreeable friend to accompany us. Soli-

tude is the bane of man ; insomuch, that it is difficult to tell which suffers most, the soul in its qualities, or the body in its temperament, from being alone. Too great a concourse of people breeds disease. Too much company is destructive to cheerfulness. For the sake of both mind and body, therefore, we should move in a little circle, and let heaven circumscribe it for us. Let our wives and children be always around us ; or, if we are not blessed with these, let a few cheerful friends be our constant companions."

" Exercise, it is said, from the seventh to the eleventh hour after eating, wastes more insensibly in one hour, than in three at any other time." If this be true, then (supposing you sup at eight o'clock in the evening) that exercise, which is used from five till seven o'clock in the morning, will promote the greatest discharge, in a given time, by insensible perspiration. Such as make dinner their principal meal are excluded from the benefit of this aphorism ; as the interval, between the seventh and the eleventh hour, with them (supposing they dine at two o'clock in the afternoon) is from nine in the evening till one o'clock in the morning—a time, in which darkness, and the unwholesome night air, forbid walking, riding, and almost every other species of manly exercise we have described.

It will be objected here, that we often see labourers return, after a full meal, to their work, without feeling any inconvenience from it. This is like the argument of those who recommend raw flesh to the human species, because the strongest and fiercest animals in nature eat it. It is because they are so fierce and so strong, that they are able to digest raw flesh. In like manner it is, because these men are naturally so strong, that labour immediately after eating does not hurt them. But do we not observe, that such people leave their tables with reluctance : How slowly do they return,—and how many excuses do they form to loiter away a little time before they renew their work.

But farther : there is another reason why we would

recommend the practice of eating the chief meal in the evening, which is indeed a little foreign to this subject. In a country like this, where the constant labour of every individual is so very necessary, the general use of this custom would add several hours to every day, and thus have the most beneficial effects upon the agriculture—commerce—and manufactures of the country, exclusive of its influence upon the health of the inhabitants.

After what has been said, we need hardly add, that exercise should never be used with a full stomach. Persons who use exercise, either to preserve or restore health, immediately after eating a hearty meal, resemble the man “who fled from a lion, and a bear met him; and who went into the house, and leaned his hand upon the wall, and a serpent bit him.”

### ON BATHING.

Bathing is the act of immersing the body, or part of it, into water, or any other fluid, and is a practice coeval with mankind.

The ancient Greeks, Romans, and Germans, as well as the Persians, Turks, and especially the modern Egyptians, enjoy the comforts and luxuries procured by bathing, in a degree of which we can scarcely form an adequate conception. From M. Savary's “Letters on Egypt,” it appears, that bathing is employed by those voluptuaries, not only for procuring the most delightful sensations, and removing that irksomeness and apathy which is the general concomitant of an idle or sensual life, but likewise with a view to prevent or cure rheumatisms, catarrhs, or such cutaneous diseases as their climate produces, by an atmosphere loaded with humid and impure exhalations, and highly unfavourable to insensible perspiration. There are no people on earth who are less troubled with asthmatic complaints than the Egyptians; and few nations so passionately fond of bathing.

Though the ancients could less dispense with the use of the bath, on account of the frequency of their

athletic exercises, as well as from the want of linen, which was then much less in use than at present, yet, in our times, it would be of great service if the use of baths were more general and frequent, and this beneficial practice not confined to particular places or seasons, as a mere matter of fashion. Considered as a species of universal domestic remedy, as one which forms the basis of cleanliness, bathing, in its different forms, may be pronounced one of the most extensive and beneficial restorers of health and vigour.

*Cold, Cool, Warm, and Hot Baths.*

*Cold Baths* are those of a temperature varying from the 33d to the 56th degree of Fahrenheit's thermometer. The general properties of the cold bath consist in its power of contracting the animal fibres, while it dissipates the *caloric* (or matter of heat) that exists between their interstices, and thus effects a greater approximation of the particles, which were before dilated and relaxed by heat. That such is the natural influence of cold, cannot be doubted; and hence this species of bath, by its powerful action on the whole system, is one of the most important medicinal remedies presented by the hand, and, as it were, supplied by the very bosom of Nature.

Even in the most remote times, cold bathing was resorted to with obvious advantage, by nervous and debilitated persons; but in the dark or middle ages, this genuine source of health was totally neglected, till the good sense of Europeans again adopted it as a general restorative, when the prevailing diseases of relaxation and atony rendered the use of such a remedy inestimable.

The superior advantages of cold bathing over all internal *corroborants*, consists chiefly in its immediate salutary action on the solids, without the intervention of the organs of digestion and nutrition; without having to perform a passage through numerous channels, before it can exert its efficacy. For this obvious reason, it is peculiarly adapted to those constitutions which, though robust, and apparently healthy, are

liable to nervous, hysteric, hypochondriacal, and paralytic affections, as well as to frequent attacks of flatulency, and consequent indigestion.

Without expatiating either on the history or the sensible effects of the *Cold Bath*, we shall proceed :

I. To a general enumeration of those cases in which it cannot be resorted to with advantage and safety ;

II. To lay down the necessary rules and directions for this *heroic* remedy.

With respect to the former, we must be concise, and shall chiefly point out, by *negative* propositions, those particular states of the body, in which *cold* bathing must *not* be attempted : namely, 1. In a full habit of body, or what is called general *plethora*, on account of the frequent febrile disposition attending such individuals. 2. In hemorrhages or fluxes of blood, open wounds or ulcers, and every kind of inflammation, whether external or internal. 3. In obstructions of the intestines, or habitual costiveness. 4. In affections of the breast and lungs, such as difficult respiration, short and dry coughs, &c. 5. When the whole mass of the fluids appears to be vitiated, or tainted with a peculiar acrimony, which cannot be easily defined, but is obvious from a sallow colour of the face, slow healing of the flesh when cut or bruised, and from a scorbutic tendency of the whole body. 6. In gouty and rheumatic paroxysms ; though Sir John Floyer asserts, that "*Podagries* sometimes have kept their fits off with it." 7. In cutaneous eruptions, which tend to promote a critical discharge of humours by the pores (yet the celebrated physician just mentioned, informs us, that great cures have been effected in the *leprosy*, by bathing in what he calls "*Cold Sulphur Water*." 8. During pregnancy. And, 9. In a distorted or deformed state of the body, except in particular cases to be ascertained by professional men.—Sir John farther recommends, but too indiscriminately, the dipping of ricketty children one year old, every morning in cold water ; and he is of opinion that, in adults, it prevents the infection of

fevers, by making the body less sensible of the changes of air; that, in old women, it stops violent hemorrhages from the uterus; that it has contributed to cure canine madness, poisonous bites of animals, and obstinate agues, by going in previously to the return of the fit, and after all the evacuations of the body have been properly attended to; and, lastly, that the *Sea-water Bath* has been of eminent service in dropsies, and defective hearing; in which last case, he knew a deaf person who could hear perfectly well on the day he bathed in the sea.

Experience, however, has but too often evinced, that this excellent remedy, whether by fresh or salt-water, cannot be implicitly relied upon in those complaints; nor will it be productive of any good effects, unless our conduct, in general, be accommodated to the following rules:

1. It is a vulgar error, that it is safer to enter the water when the body is *cool*, and that persons heated by exercise, and beginning to perspire, should wait till they are perfectly cooled. Thus, by plunging into it, in this state, an alarming and dangerous chiliness frequently seizes them, and the injury sustained is generally ascribed to their going into it too warm; while it doubtless arises from the contrary practice. Dr. J. Currie, of Liverpool, in his valuable "*Treatise on the effects of Water in Fevers*," says, with equal truth and precision, that "in the earlier stages of exercise, before profuse perspiration has dissipated the heat, and fatigue debilitated the living power, nothing is more safe, according to my experience, than the cold bath. This is so true, that I have, for some years, constantly directed infirm persons to use such a degree of exercise, before immersion, as may produce some increased action of the vascular system, with some increase of heat, and thus secure a force of re-action under the shock, which otherwise might not always take place. But, though it be perfectly safe to go into the cold bath in the earlier stages of exercise, nothing is more dangerous than this practice, after exercise has produced profuse perspiration, and

terminated in languor and fatigue ; because, in such circumstances, the heat is not only sinking rapidly, but the system parts more easily with the portion that remains." In short, it is a rule liable to no exception, that moderate exercise ought always to precede cold bathing, to promote the re-action of all the vessels and muscles, on entering the water ; for neither previous rest, nor exercise to a violent degree, are proper on this occasion.

2. The duration of every cold bathing applied to the whole body ought to be short, and must be determined by the bodily constitution, and the sensations of the individual ; for healthy persons may continue much longer in it than valetudinarians ; and both will be influenced by the temperature of the air, so that in summer they can enjoy it for an hour, when, in spring or autumn, one or two minutes may be sufficient.— Under similar circumstances, cold water acts on aged and lean persons with more violence than on the young and corpulent : hence the former, even in the hottest days of summer, can seldom with safety remain in the bath longer than a quarter of an hour, while the latter are generally able to sustain its impressions for double that time.

3. The head should first come in contact with the water, either by immersion, pouring water upon it, or covering it for a minute with a wet cloth, and then diving head foremost into the water.

4. As the immersion will be less felt when it is effected suddenly ; and as it is of consequence that the first impression should be uniform over the body, we must not enter the bath slowly or timorously, but with a degree of boldness. A contrary method would be dangerous ; as it might propel the blood from the lower to the upper parts of the body, and thus occasion a fit of apoplexy. For these reasons, the *shower bath* is attended with considerable advantages, because it transmits the water quickly over the whole body ; and, consequently, is more consistent with the rules before-mentioned.

5. The morning is the most proper time for using



the cold bath, unless it be in a river; in which case the afternoon, or from one to two hours before sunset, will be more eligible; as the water has then acquired additional warmth from the rays of the sun, and the immersion will not interfere with digestion: on the whole, *one* hour after a light breakfast,—or *two* hours before, or *four* hours after dinner, are the best periods of the day for this purpose.

6. While the bather is in the water, he should not remain inactive, but apply brisk general friction, and move his arms and legs, to promote the circulation of the fluids from the heart to the extremities. It would, therefore, be extremely imprudent to continue in the water till a second chillness attacks the body; a circumstance which would not only defeat the whole purpose intended, but might, at the same time, be productive of the most injurious effects.

Immediately after the person leaves the bath, it will be necessary for him, with the assistance of another person for dispatch, to wipe and dry his body with a coarse and clean cloth. He should not afterwards sit inactive, or enter a carriage, unless warmly clothed and wearing flannel next the skin: if season and circumstances permit, it will be more proper, and highly beneficial, to take gentle exercise till the equilibrium of the circulation be restored, and the vessels, as well as the muscles, have acquired a due degree of re-action.

The best place for cold bathing is in the invigorating water of the sea, or a clear river; and where neither of these can be conveniently resorted to, we recommend the *Shower Bath*. Its effects are doubtless more powerful than those of the common bath: and though the latter covers the surface of the body more uniformly, yet this circumstance by no means detracts from the excellence of the former: because those intermediate parts, which the water has not touched, receive an electric and sympathetic impression, in a degree similar to those brought into actual contact. As every drop of water from the shower bath operates as a partial cold bath, its vivifying

shock to robust individuals is more extensive and beneficial than from any other method of bathing.

Hence this bath is possessed of the following important advantages : 1. The sudden contact of the water may be repeated, prolonged, and modified at pleasure. 2. The head and breast are tolerably secure, as it descends towards the lower extremities : thus, the circulation is not impeded, breathing is less affected, and a determination of blood to the head and breast is effectually obviated. 3. As the water descends in single drops, it is more stimulating and pleasant than the usual immersion, and can be more readily procured and adapted to circumstances. And, 4. The degree of pressure from the weight of water is here, likewise, in a great measure prevented ; nor is the circulation of the fluids interrupted so as to render the use of this bath in any degree dangerous ;—a circumstance of the highest importance, because, by the ordinary immersion, persons are often exposed to injuries which they least apprehend.

*Cool Baths* may be called those which are of a temperature between the 56th and 76th degrees of Fahrenheit's scale. They are of great service in all cases where cold bathing has before been recommended, and require nearly similar precautions. As their influence, however, on first entering them is less violent, though their subsequent effect may be attended with equal advantages, it follows, that even persons of a more delicate organization may resort to them with greater safety.

With respect to rules for cool bathing, we refer the reader to those stated in the preceding article ; and shall only remark, that notwithstanding its effects are less perceptible while the body continues in the water, it is necessary that the bather, on coming out of it, should be wiped dry with the greatest expedition, to prevent catarrhal affections.

*Warm Baths*, are such as have a temperature above the 76th, and not exceeding the 96th or 98th degree of the thermometer before-mentioned. There are various springs in Britain, especially those of Bath,

Clifton, Buxton, and Matlock, to which Nature has given this temperature, the most beneficial to the human body. But whether the tepid bath of this description be natural or artificial, it is equally conducive to the restoration of energy, though its effects have, till lately, been little understood. Physicians, as well as patients, have hitherto been too generally accustomed to consider a warm bath as weakening the body, and useful only for the removal of certain diseases, especially those of the skin. Experience, however, has amply proved, that there can be no safer and more efficacious remedy, in a variety of chronic or inveterate complaints, than the warm bath, if properly used, and continued for a sufficient length of time. Instead of *heating* the human body, as has erroneously been asserted, it has a cooling effect, inasmuch as it obviously abates the quickness of the pulse, and reduces the pulsations in a remarkable degree, according to the length of time the patient continues in the water. After the body has been overheated by fatigue from travelling, violent exercise, or from whatever cause, and likewise after great exertion or perturbation of mind, a tepid bath is excellently calculated to invigorate the whole system, while it allays those tempestuous and irregular motions, which otherwise prey upon, and at length reduce, the constitution to a sick-bed. Its softening and assuasive power greatly tends to promote the growth of the body; on which account it is peculiarly adapted to the state of such youth as manifest a premature disposition to arrive at a settled period of growth; and it has uniformly been observed to produce this singular effect in all climates.

*Hot Baths* are those which have a temperature above 98 or 100 degrees of Fahrenheit, and are occasionally increased to 110 or 120 degrees, and upwards, according to the particular nature of the case, and the constitution of the patient. There can be no stated rules laid down for its use, as every thing depends upon the peculiar circumstances of each pa-

tient. No prudent person will, we trust, have recourse to a *hot* bath without medical advice.

Dr. Oliver asserts, "that by the prudent use of the hot bath, most chronical disorders, and gouty cases in particular, *not in an inflamed state*, may be relieved, and sometimes cured; while persons in high health may be greatly injured by wantonly sporting with so powerful an *alterative* of the animal machine, either from sickness to health, or from health to sickness."

### ON CONTAGION.

Contagion, or infection, is the communication of a disease from one body to another. In some cases it is conveyed by immediate contact or touch; in others, by infected clothes, such as cotton, and particularly wool, which of all substances is the most susceptible, because it is extremely porous. Contagious matter is also, though we apprehend erroneously, said to be transmitted through the air, at a considerable distance, by means of effluvia arising from the sick, in which case the atmosphere is said to be infected.

Some authors have asserted, that the gout and consumption are likewise contagious; but this appears to be very doubtful. It is, however, highly probable, that those diseases may be communicated by the milk of nurses. In temperate climates, like that of Britain, there is but little danger of contracting them by infection among *adults*; though, in the warmer climates of Europe, it will be prudent to take the necessary precautions against such accidents. To obviate as far as possible all infection, we would recommend the following rules:

*Rules to be observed in the Apartments of those who are confined by Infectious Diseases.*

1. It is of the utmost importance to the sick, and their attendants, that there be a constant admission of *fresh air* into the room, and especially about the

patient's bed. The door, or a window, should therefore be kept open both day and night, care being taken to prevent the wind from blowing directly on the patient.

2. An attention to *cleanliness* is indispensable. The linen of the patient should be often changed; and the dirty clothes, &c. should be immediately put into fresh cold water, and afterwards well washed. The floor of the room should be cleansed every day with a mop, and all discharges from the patient should be immediately removed, and the utensils washed.

3. Nurses and attendants should endeavour to avoid the patient's breath, and the vapour from the discharges; or, when that cannot be done, they should hold their breath for a short time. They should place themselves, if possible, on that side of the bed from which the current of air carries off the infectious vapours.

4. Visitors should not come near to the sick, nor remain with them longer than is absolutely necessary; they should not swallow the spittle, but should clear the mouth and nostrils when they leave the room.

5. No dependance should be placed on vinegar, camphor, or other supposed preventives, which, without attention to *cleanliness* and admission of *fresh air*, are not only useless, but by their strong smell render it impossible to perceive when the room is filled with bad air, or noxious vapours.

If these rules be strictly observed, an infectious disease will seldom, if ever, be communicated; but, if they be neglected, especially where the patient is confined to a small room, scarcely one person in fifty who may be exposed to it can resist the contagion; even infants at the breast do not escape it, though providentially less liable to be affected than adults.

Since infection originates in close, crowded, and dirty rooms, those who make a practice of admitting the fresh air, at some convenient time, every day, and of frequently cleansing and fumigating their apartments, bedding, furniture, &c. and washing the wall

with quick-lime, mixed with water, in the room, may be assured they will preserve their families from malignant fevers, as well as from other diseases.

The process of fumigation is as follows :

Take an equal quantity of powdered nitre, and strong vitriolic acid, or oil of vitriol (about six drams of each are sufficient); mix them in a tea-cup, stirring them occasionally with a tobacco-pipe, or piece of glass; the cup must be removed occasionally to different parts of the room, and the fumes will continue to arise for several hours. The oil of vitriol should be in *quantity*, not *weight*.

### ON DEBILITY.

Debility, is that feeble state of life in which the vital functions are languidly performed; when the mind loses its cheerfulness and vivacity; when the limbs are tottering with weakness, and the digestive faculty is impaired.

This complaint, which at present is so prevalent, even in the bloom of life, and among those who ought to form the most vigorous and robust part of a nation, may arise from a great variety of causes, of which the following are the principal: 1. Descent from enfeebled parents; 2. Changes in the admixture, and component parts of the surrounding atmosphere; 3. A sedentary and indolent mode of life; 4. Immoderate sleep; or, in a still more hurtful degree, want of the necessary portion of sleep and repose; 5. Too great exertions either of mind or body; 6. The *unnecessary* and *imprudent* use of medicines; lastly, the almost total disuse, and exclusion of gymnastic exercise, and the general introduction of *sedentary games*, the effect of which creates an almost universal apathy to every pursuit that requires exertion.

Debility is the source of numerous disorders, such as spasms, palsy, violent evacuations, hemorrhages, putrid and nervous fevers, fainting fits, and apparent death.

The means employed for the preserving and main-

taining *feeble life* (says Dr. Struve, in his *Asthenology*,) are as various as the causes on which it depends, and the disorders with which it is generally accompanied. The first object that claims the attention of persons in this state, is *warmth*; the external application of which ought to be proportioned to the temperature of the body, and gradually augmented, accordingly as the natural warmth of the individual increases. If duly applied, gentle heat possesses both stimulating and strengthening properties, by which the activity of the vital principle is excited and supported. The communication of warmth may be considerably facilitated by the use of the *tepid* or warm bath, of which we have already spoken.

The next, and one of the most important objects to debilitated persons, is *diet*; in which respect much depends on their previous habits and modes of life. If they carefully attend to the peculiarities of their constitution, and observe whatever is to them salutary or hurtful, they may prolong their lives for a considerable time; provided their conduct be guided by the necessary knowledge and experience. In short, to guard against excess, and pursue a middle course, will be the best means of accomplishing the most salutary end.

Debilitated persons ought to be imperceptibly hardened;—the transition to a severer and more invigorating course of life must be so progressive, that the convalescent be not subjected to any disagreeable restraint; and this method should likewise be continued for a sufficient length of time, during which he ought never to return to his former debilitating habits.

Such invalids should eat only a very small proportion of animal food, namely, white meat, which is least stimulating, together with a due quantity of the most nutritious vegetables. They may also partake of small portions of flesh-broth, thickened with sufficient bread, rice, &c. to render it more nourishing and less flatulent; but they ought to abstain from fat, and milk, unless the latter be given immediately after it is drawn from the cow.

If solid food cannot be allowed, or if it irritate the stomach, recourse must be had to gelatinous aliment, such as eggs, nourishing soups, salop, barley broth, shell-fish, &c.; which, if taken in small quantities, are exceedingly strengthening.—Persons of this description ought to accommodate their whole dress to the climate, and changes of the weather; they should at all times endeavour to procure a middle temperature between cold and heat; for instance, from 60 to 65° of Fahrenheit's scale. Woollen clothing is, in this respect, far preferable to fur; as the latter heats the body, and increases perspiration. Flannel, if worn next the skin, will preserve the human frame in a more equal temperature than is attainable by any other substance; and at the same time protect it from the hurtful influence of the two extremes.

Individuals, in this state, require longer and less disturbed rest than those in perfect health and vigour. Labour and exercise, adapted to their habits and strength, will greatly promote that desirable object; likewise the tepid bath; a clean, and not too soft couch; an airy, healthy, and capacious apartment; but particularly a calm and composed mind; which last possesses a most powerful influence in preserving health and life; for, without tranquillity, all other means will be ineffectual.

### ON COUGHS.

Cough is a violent, often involuntary, and sonorous expiration, suddenly expelling the air through the contracted glottis. It is excited by any acrid substance, either chemically or mechanically applied to those passages through which the air enters. These are lined with a membrane so exceedingly sensible, that it cannot bear the mildest stimulus, such as a drop of cold water, without throwing the muscles serving for respiration, into a violent convulsion. Hence the air is expelled with a force sufficient to carry along with it the irritating substance; and thus a cough becomes not only useful, but indispensably necessary for the



preservation of life; as this effort frees the lungs from every kind of stimulating matter, or foulness, which might otherwise be attended with suffocation. A cough is, therefore, an almost inseparable companion of every inflammation of the lungs, as well as every difficulty of breathing; nay, it frequently takes place, when the purest air enters an excoriated, sore, or too sensible windpipe, and its tender branches. It may also arise from too great an irritability of the nervous system, or even of some particular part, such as the ear; from worms and impurities in the first passages; obstructions of the abdominal viscera; acrimony clogging the glands, and originating frequently from a catarrhal and scrophulous disposition; hysteric weakness; accumulation of sharp humors in the lungs, &c.

From this view of the causes which produce coughs, it will not be expected that we should expatiate on the treatment of the complaint, under every form and variety of circumstances: we shall therefore consider it under the following heads:

1. The *convulsive cough of infants*, in general, proceeds from a foul and disordered stomach, in consequence of too viscid and superfluous food, such as porridge, puddings, cakes, gingerbread, confectionary, &c. It is accompanied either with a voracious appetite, or a total want of it; difficulty of breathing, a tumefied hard belly: nausea, and often vomiting. The breath and excrements of such children are unusually fetid; they seldom cough from the breast, but make efforts to vomit, and throw up a viscid phlegm; in consequence of which, they remain easy for a longer time than usual. Their tongue is always impure, and the cough increases in violence, after meals.

For the cure of this troublesome complaint, there are no better remedies than gentle emetics, and laxatives. A child under one year old, may occasionally take a large tea-spoonful of this mixture; namely, syrup of squills and rose-water, of each one ounce; powdered rhubarb, four grains; and ipecacuanha, two grains. The dose may be repeated every half hour, for three or four times, till it produces vomiting; and,

in children two or three years of age, it may be somewhat increased, but never to exceed a dessert-spoonful. After the medicine has operated, a clyster, composed of milk and water, with a little oil and sugar, ought to be given, and repeated every other, or third day, while a sparing diet should be strictly observed.

II. The *convulsive cough of adults*, likewise arises from the disordered organs of digestion, and is frequently the constant lot of tipplers in spirituous liquors, and habitual drunkards. At its commencement there is little or no expectoration; and an inclination to vomit generally precedes a fit of coughing.—The treatment of this malady is similar to that of the same species in children; but, if the paroxysms should be so severe as to threaten suffocation, we advise, from experience, small doses of calcined zinc, from half a grain to one grain at a time, to be taken in a spoonful of luke-warm water, and to be repeated, if necessary, every five or ten minutes.

III. The *catarrhal cough*, which is the most common, and very frequent, especially in the winter season. Its immediate cause is a defluxion of humours from the salival glands, chiefly on the trachea or wind-pipe; thus irritating the throat, and producing fits of coughing. The continuance of such efforts to expel superfluous matter, generates another cause of the complaint; for, when this humour glides down into the air-vessels of the lungs, it fills many of their cavities, and becomes, in a manner, inspissated, by the continual exhalation of its minutest parts in respiration. The salival humour, thus thickened, by the joint action of the lungs and the air in breathing, is occasionally raised and brought into the mouth, so that in its passages it excites a fit of coughing. In this situation, especially after *catching cold*, and, with a view to prevent, rather than to cure, a catarrhal cough, the late Dr. Lobb suggested a remedy, which simply consists in chewing any kind of *dry* aliment. As the action of the muscles, in mastication, excites the salival glands, and all other adjacent glandules, to discharge their contained humour, and to mix it

with dry food, before it is conveyed to the stomach, where it cannot fail to promote digestion, he concludes that, in this manner, a much smaller quantity of the salival humour will fall into the air-vessels of the lungs, and thus the proximate cause of the cough be gradually counteracted. Hence Dr. Lobb advised his patients to use biscuits of all sorts, though hard bread or crust will answer the same purpose: 1. To eat some mouthfuls of dry food previously to going to bed, which often prevents those fits of coughing that otherwise would disturb their sleep. 2. To resort to the same remedy in the morning, when it will convey the salival humour into the stomach. 3. To repeat it every time during the day, when, by a *tickling* in the throat, they apprehend the approach of a fit of coughing. By such practices, he observes, great benefit has been derived by himself and others. We are, however, inclined to think, that it will be useful only at the commencement of the complaint. And the Doctor likewise adds, that to a patient long afflicted with it, totally deprived of his appetite, and perhaps sunk down into a consumption, it is not so effectual, though always of some service. Those who cannot possibly swallow any kind of solid food, he advises, at least, to chew dry aliment, at the times before specified, and again to part with it: this expedient will considerably lessen the quantity of salival humour, and thus prevent, or shorten, many fits of coughing.

It is a common error, that *all* coughs may be cured by the usual mode of administering oily, diluent, and demulcent remedies. At first, indeed, such medicines may be serviceable, to sweeten the acrid humours then secreted, and to allay the irritation. But, as the compounds of oil, spermaceti, &c. easily turn rancid, and even in a fresh state impair the appetite, and affect the breast, we consider them as extremely precarious: hence we would prefer the chewing of the extract of liquorice, gum arabic, and similar substances, to all *liquid* preparations. If, however, the

cough has made such progress, as not to yield to the treatment here alluded to, in this case we can confidently recommend the use of the following acid julep: Three ounces of sweet olive oil, two ounces of syrup of capillaire, one ounce of conserve of roses, and thirty drops of strong oil of vitriol; mix them properly, and take a tea-spoonful or two, frequently. These ingredients form an excellent medicine for adults; but, for children, we would prefer a julep prepared of eight ounces of rose-water, four ounces of syrup of dry roses, and six drops of vitriolic acid; to be taken by spoonfuls, as often as occasion may require, especially if the cough be accompanied with thirst and febrile heat. In the latter cases, the julep should be diluted with sweet whey, which of itself is an incomparable beverage in catarrhal affections.

Lastly, we cannot omit to insert in this place, a remedy which is highly praised by the late Dr. Unzer, of Hamburgh, and the physicians of that city, as being of inestimable value in all obstinate catarrhs, stagnations, and accumulations of humours in the breast; *dry coughs*; and severe bruises near the pectoral vessels, from which suppurations and ulcers may be apprehended. This medicine is a simple decoction of the Calaguala, a root lately imported from South America, and now universally preferred to the seneka or rattle-snake root, which was formerly used for similar purposes. Dr. Unzer directs two drams of the calaguala to be boiled in a quart of water, till the fourth part is evaporated, and to drink several cups of the strained decoction, instead of tea. When taken sufficiently strong, and for a proper length of time, it evidently acts on the skin and kidneys, by determining the noxious humours to those outlets. He cautions, however, against a spurious species of that root, which is frequently sold by druggists, instead of the genuine; and an account of which is given by M. Galmetti, an Italian writer.

## ON ASTHMA.

Asthma is a spasmodic disease of the organs of respiration, attended with cough, difficulty of breathing, wheezing, &c.

There are two distinct species of this disorder, each of which requires a different treatment: 1. When it is attended with an accumulation and discharge of humours from the lungs, in which case it is called *humid asthma*; and 2. When the patient is not troubled with coughing, or at least has no expectoration, which is termed *dry asthma*. Yet these complaints seldom affect persons in early life, and then chiefly the male sex.

Asthma, in general, is distinguished by paroxysms, preceded by a sense of tightness in the chest, and, in general, occurs during the night. The patient cannot lie in an horizontal posture, without danger of suffocation; and, when seized, is immediately obliged to sit upright. After continuing for several hours in this state, he becomes easier; his breathing is less difficult and oppressed, the cough not so frequent, and an expectoration of mucus taking place, the paroxysm abates until the next night; but the symptoms continue in a greater or less degree, during the day, according to the particular state of the atmosphere, and other circumstances. The attack is sometimes induced by external heat, at others by cold; but in either case, their *sudden* accession will sufficiently distinguish the asthma from symptomatic shortness of breath. There is a greater probability of curing it in youth, than at an advanced age. But, in the former case, it is often succeeded by a confirmed pulmonary consumption; and, after a long continuation, generally terminates, either in dropsy of the breast, or an aneurism of the heart or arterial system. A tremulous respiration, paralyisms of the arms, and a diminution of the urinary secretion, are unfavourable symptoms.

This is one of the chronic diseases, which may continue for a considerable number of years. Sir John Floyer, when he published his celebrated treatise on

this subject, had suffered under repeated paroxysms for almost thirty years. The usual treatment is, to bleed, during a fit, unless extreme weakness or old age should forbid the use of the lancet; to inject a purging clyster, containing a solution of asafœtida; and, if the violence of the symptoms do not speedily abate, to apply a blistering plaster to the neck or breast. Previously to a fit, emetics have been found useful, especially when the stomach was loaded with crudities. In the intervals, *lac ammoniacum*, vinegar of squills, asafœtida pills, and other stimulating and deobstruent medicines, are usefully employed. Sir John declares, that a strong infusion of roasted coffee is the best remedy he ever experienced, to abate the paroxysms. The coffee must be of the best Moco, newly burnt, and made very strong, immediately after grinding. He orders an ounce to one dish, which is to be repeated after the short interval of a quarter or half an hour, and taken without milk or sugar. By the use of this remedy, he lived many years tolerably easy under his asthmatic complaint. Dr. Perceval also asserts, that he has employed it with great success.

In a violent paroxysm of asthma, from the effects of which there is imminent danger of suffocation, the administration of an emetic is sometimes advisable, as vomiting tends to produce immediate relief. This remedy, however, can only be resorted to with safety, under the following circumstances: 1. That there be no symptoms of inflammation discoverable; 2. That the humid matter in the pectoral organs be loose, and ready for expectoration, which may be ascertained by a free rattling of the throat; 3. When respiration itself is not extremely impeded; and 4. When the patient's strength is not too much exhausted.

On these conditions, an emetic may prove the only means of saving his life; though it may also accelerate the fatal catastrophe, especially if the breast be clogged with matter, and the patient possess not vigour and breath sufficient to support the operation of an emetic. Hence a judicious practitioner will, in

such cases, not hesitate to direct a brisk dose, in order most speedily to produce the desired effect, and to save the constitution from being unnecessarily exhausted. But this illustration also evinces the importance of every step in the practice of physic; and that neither officious friends, nor mercenary pretenders; are the most proper persons, whose services can be useful on such or similar occasions. We, therefore, think it our duty to corroborate this proposition still farther, by exhibiting a concise view of those causes from which that formidable disease may arise in different individuals. The principal of these are as follow :

1. Collections or congestions of blood in the lungs, from which there may not only arise the dry asthma, but likewise the Suffocative Catarrh, which is, strictly, an acute disease, occasioned by an extravasation or effusion of blood into the cellular substance of the lungs.

2. Congestions of serous and pituitous humours, arising gradually, and producing, in general, the humid asthma: but if this collection of humours takes place suddenly, as is the case in inflammations of the chest, they are then attended with the suffocative catarrh.

3. Spasms in hypochondriacal and hysteric persons; which often lay the foundation of a dry, convulsive asthma.

4. Worms in the first passages.

5. Stones in the gall bladder; aneurisms; *polypi*, or concretions of grumous blood in the large vessels.

6. Asthma may likewise be a symptom of dropsy of the chest.

7. Scrophulous, rheumatic, gouty, psoric, and scorbutic acrimony—all may occasion the asthma, either in the lungs themselves, or by consent of parts.

8. Noxious vapours arising from the decomposition of lead, or arsenic; which generally cause a convulsive asthma.

9. The introduction of dust into the lungs, to which millers, masons, hatters, &c are subject.

10. Tubercles in the lungs, from which arises the dry asthma.

11. The abuse of ardent spirits.

12. A weak digestion, attended with great flatulency.

13. Every thing that oppresses the vessels, such as an expansion of the uterus, obesity or preternatural fatness, aneurisms, fleshy and other tumours in the chest, a distended abdomen by dropsy, obstipations, &c.

14. General debility, by which respiration is frequently rendered difficult, without any other particular cause. This affection may be ascertained from the circumstance, when the patient ascends a number of steps with greater facility than he is able to descend, because the latter requires a greater degree of muscular effort than the former.

What a variety of causes do we here behold—many others being reserved, as too abstruse for *non-professional* readers; and who will be bold enough to pretend, that he has discovered a *specific* for the cure of asthma?

Beside the remedies already pointed out as proper for the general treatment, we shall here briefly observe, that, in the *periodical* asthma, infusions of bitter herbs, such as wormwood, lesser centaury, the blessed thistle, as well as gum ammoniac, vinegar and honey, acids in any form, nay, mixed with proportionate quantities of laudanum, have been used with the best success. The exercise of riding on horseback is indispensably necessary. Changes of weather are very sensibly felt by asthmatic persons, who, in general, cannot live with any comfort in the atmosphere of large cities, though some are to be found who feel themselves better in an air replete with gross effluvia; and breathe with greater ease in a crowded room, where there is a fire and candles. A principal advantage, however, will be derived in this obstinate disorder from a light and *frugal diet*, consisting of such animal food only as may be easily digested, and, at the same time, avoiding all flatulent and heating sub-



stances, as well as liquors ; for instance, wine, milk, turnips, cabbages, &c. not exposing the body to the influence of hot air, strong smells, offensive vapours, and the like. As a most excellent *diet-drink*, we can, from experience, recommend the use of toast and water, in which a few grains of nitre, or sal ammoniac, might be dissolved ; or with the addition of a little pure vinegar. And, if any alterative medicine should become necessary, after the proper evacuations, by either bleeding and blistering between the shoulders, or, according to circumstances, by gentle laxatives, and nauseating doses of ipecacuanha, we have found the following mixture frequently of great advantage : Take oxymel of squills, and cinnamon water, two ounces of each, and pure spring water four ounces ; two table-spoonfuls, each dose, every three or four hours.

### ON APPETITE.

Appetite, in general, signifies the natural instinctive desire by which the animal is led to pursue the gratifications of sense. In the present instance, however, we shall confine its meaning to the craving for food. In this respect, the appetite of man may be divided into three different species, though that evinced by inferior animals is naturally simple, because it is not impaired by art. Thus, if children were never enticed, by weak parents and ignorant nurses, to eat more than their own inclination directs them, or to partake of highly flavoured artificial dishes which stimulate the palate, and preternaturally distend the stomach, there is every reason to believe that the following classification would be unnecessary :

1. The *natural* appetite, which is contented as well with the most simple as the most compound and delicious dishes : such is that of country people employed in hard manual labour ; of children who have not been mismanaged in the nursery ; and of every rational person who is convinced of the advantages

resulting to both mind and body, from a simple and frugal diet.

2. The *artificial* appetite of the epicure, the hypochondriac, and the tipler; all may be ranked under the same class. It would be needless to add, in this place, any other remark, than that such an inclination for sensual enjoyment remains only so long as the operation of these exquisite stimulants continues. When the papillary nerves of the palate can be no longer influenced by such excitement, the sensualist loses his appetite, and is punished with all the concomitant symptoms of indigestion.

3. The *habitual* appetite, though partly acquired, is not liable to those serious objections which apply to the latter species; nor is it attended with any other disadvantages than those arising from long-fasting, or an undue allowance of food on particular occasions. Thus, after fatiguing exercise, when the fibres of the digestive organs are already weakened, and the circulation of the blood to those parts is unusually increased, the nourishment then received can be digested only with great difficulty, and to the detriment of the body.

*Want of appetite* may proceed either from a defective energy of the stomach, originating more frequently from an immoderate quantity, than the improper quality, of food; or it may be occasioned by the sympathy of other diseased parts, such as the liver, bowels, uterus, &c.; or by intestinal worms, obstructions of the mesentery, and many other causes. Hence it will be understood, that there can be no *specific* remedy suggested to remove the complaint; but that the treatment must be regulated by the nature of the case, and the constitution of the patient. In general, however, the following hints deserve attention. When the stomach loathes wholesome food, and is troubled with habitual flatulency, and eructations of a bitter, rancid, or saline taste, it should be previously ascertained whether an emetic be proper, or necessary, to evacuate its foul contents. Yet to determine this point requires a degree of skill and experience which

few persons in common life possess: on the other hand, the administration of a simple emetic may be attended with serious consequences. For this reason, we would previously recommend a change of air and diet; early rising in the morning; gentle exercise; abstinence from all hot drinks, particularly tea, punch, and hot broths, fat or hard meat, spirituous liquors, tobacco, &c.; to avoid the influence of depressing passions, such as excessive grief, fear and anxiety; and if this treatment, after having been rigorously pursued for several days or weeks, produce no change in the appetite, then to have recourse to gentle emetics, or rather to the operation of nauseating medicines. According to our experience, the powder of ipecacuanha, in the smallest doses of a quarter or sixth part of a grain, in a little cold water, repeated every ten minutes for two or three hours together, before breakfast, stands eminently recommended in disorders of this nature, and has seldom failed to be of service to phlegmatic or corpulent individuals, when continued for several mornings. But if there appear to be great fulness of the stomach, or bowels, attended with the symptoms before described, it will sometimes be necessary to give such an emetic as may, according to circumstances, at the same time relieve the bowels. A mixture of two parts of ipecacuanha wine, and one part of antimonial wine taken in single tea-spoonfuls every quarter of an hour, without any farther drink till it begins to operate, generally produces the desired effect.

After the stomach and bowels have, by such or similar means, been evacuated, it will be useful to strengthen the tone of the fibres, by drinking small draughts of cold chamomile-tea, or an infusion of quassia, or simple toast and water well prepared, which last may be justly considered as one of the mildest and most grateful corroborants.

An *insatiable appetite* may arise from too great a distension of the stomach in early infancy; from an over-abundant secretion of the gastric or digestive liquor; from drinking large quantities of stimulating

acid beverage, such as cyder, perry, butter-milk, &c. but especially from a bad habit of fast eating, without properly masticating hard substances. Hence the first maxim in diet should be, *to eat slowly*, in order to prevent a sudden distention of the digestive organs, and to allow sufficient time for the food to be duly prepared, and gradually mixed with the gastric juice. It would be superfluous to add any other suggestions respecting the treatment and cure of this troublesome complaint, which, in the present times of frugality, cannot fail to find its own remedy.

### ANODYNES.

Anodyne is a term applied to medicines which have a tendency to assuage pain. This desirable purpose may be attained in three different ways: 1. By *paregorics*, or such remedies as are calculated to ease pain; 2. By *soporifics*, which relieve the patient by causing artificial sleep; and 3. By *narcotics*, or such as stupify, by their action on the nervous system.

This division, though sanctioned by general authority, is very imperfect; and we shall attempt to explain the subject in a manner, perhaps, more consonant with just principles of animal economy—not from the result, but from the cause by which a proper application of anodynes induces certain changes in the human body. In order to give a distinct view of the subject, we shall arrange them under three classes; namely,

I. Such remedies as tend either to remove the offending cause, or prevent the part affected from receiving a sensible and painful impression, viz. in consequence of the amputation of a limb; the drawing of a tooth; the burning of parts either by the cautery, or by means of a red-hot iron; the application of the tourniquet, a tight ligature, compresses, &c. To this class also belong opiates, and other stupifying medicines, administered for the suspension of pain; but which may be justly termed, “poisons of the sensitive faculty.” However liberally others may explain

the effects of opium on the organs of the mind, we cannot avoid observing, that its operation on the *sensorium commune* is always attended with violence, and that so powerful a medicine ought not to be intrusted to the hands of those who are but little acquainted with its nature. Nay, we are of opinion, that even medical men cannot be too careful in its exhibition; but far from wishing to deprecate the use of this invaluable drug, which cannot, in the present state of medical science, be excluded from the list of *medicinal* substances, we shall here venture to suggest a few ideas respecting the propriety and greater safety of its external use.

In very painful wounds, excruciating rheumatism, contractions, and paralytic affections arising from frequent spasms and strictures, the *external* use of opium is both safe and beneficial, especially if combined with antispasmodic and emollient remedies, such as camphor, lint-seed oil, marsh-mallows, &c. These alone are frequently sufficient to relieve distressing pain, without the assistance of anodynes properly so called; as the latter generally determine the circulation of blood towards the head, and occasion giddiness, stupor, and a relaxation of the nerves. With the above additions, however, opium may be advantageously employed in the form of baths, fomentations, ointments, cataplasms, and particularly in *clysters*.

When the pain is in the interior organs, and its seat cannot be properly ascertained, or when it arises from causes which neither the patient nor physician can discover, we would prefer the following *anodyne liniment*, a timely application of which has frequently procured immediate relief: take one ounce of the dried leaves of the common henbane, or four ounces of the green plant, and half a pint of sweet olive oil, digest them near a fire for a few days, then express the leaves through a coarse piece of linen, filter the decoction, and preserve it in a vessel closely stopped. This preparation, if applied warm, or rubbed into painful parts, has, according to our own experience, proved of singular efficacy.

II. Those remedies which are calculated to change, suppress, or evacuate the *material* cause of pain, and are therefore the most rational, though, unfortunately, not always within the reach of the medical practitioner. Thus, if the intestinal canal be obstructed, or the stomach clogged with acrid matter that cannot fail to produce violent colics, and other disorders, the principal aim will be to evacuate it by purgatives, or emetics, and thereby not only cure the complaint, but, at the same time, save the patient's life, which, by means of opiates, given either by the mouth or clyster, without such previous evacuations, would be exposed to imminent danger. Hence we are induced to express our opinion decidedly in favour of those who, from a conviction of the great importance of the trust reposed in them, seriously hesitate to employ anodynes, so long as there is a possibility of dispensing with such precarious remedies. But, in cases where the morbid matter cannot be expelled, a skilful practitioner will endeavour, at least, to deprive it of its activity, or to neutralize it, while in the human body. In this manner, pains arising from acrimonious humours are relieved by drinking bland, diluent, and saccharine liquors; from intestinal worms (though resisting every vermifuge), by remedies which destroy them before they are carried off by the feces; from a pleurisy, by such means as resolve the stagnant fluids, and promote their circulation through the constricted capillary vessels; from stones in the bladder, if they be too large for expulsion, by the use of lime-water, which tends to blunt their edges, &c.

III. The last class of anodynes comprehends all those which, by exciting impressions and representations of a different kind, either counteract or subdue the pain. These are generally resorted to, when neither the affected organs can be locally relieved, the material cause removed, nor the senses stupified by narcotics. Hence physicians are frequently obliged to employ such expedients as may suppress the partial affection, by exciting feelings of a different nature, and perhaps to a more intense degree than those oc-

casioned by the original complaint. These remedies, however, require equal ingenuity and precaution. Thus, for instance, violent head-ach, tooth-ach, pains of the breast, &c. may be alleviated by blisters, or cataplasms made of onions, garlic, mustard-seed with vinegar, horse-radish, and similar stimulants; rheumatic and gouty affections, by early friction with flannel, which, for many reasons, is preferable to a flesh-brush. All these applications, nevertheless, ought to be maturely considered, previous to their use, with respect to the place, strength, and duration, of the stimulus.

To this class may also be referred, diversions of the mind; inclinations and passions artificially excited, in order to direct the attention of the patient to a different object: such expedients are frequently of excellent service, especially in chronic diseases, and to inveterate hypochondriacs. In a similar manner, terror and anger sometimes instantaneously suppress the painful sensations of gouty and rheumatic patients. Thus, the pleasures of conversation, a country-life, theatres, music, dancing, hunting, and similar amusements, are often more effectual anodynes than wine, brandy, or laudanum: the former agreeably cozen and delude the mind; the latter always, sooner or later, aggravate the complaint.

Having given this concise view of the subject, we shall add only a few general observations relative to the *manner* of determining whether and when a patient may with safety resort to anodynes.

If a person be suddenly seized with violent pains, the cause or source of which cannot be clearly ascertained, it will be of the first consequence to inquire, whether the patient be at the same time subject to febrile heat, accompanied by an unusual determination of blood towards the head, and a strong, full pulse. In such case, if the pain should not abate on the friction of the parts affected, or on plunging the legs in warm water, it would be proper to take a few ounces of blood from the arm or foot. In many instances of acute pain, however, the pulse is consider-

ably depressed, and the circulation of the fluids in general so languid, that the extremities appear rather pale and cold : yet, under these circumstance also, it may frequently become necessary to bleed the patient without delay, in order to restore an uniform action of the vessels ; a point to be determined by the judicious practitioner.

From whatever cause an internal or deep-seated pain may arise, it will always be useful to allow the patient considerable portions of diluent drink, such as luke-warm water mixed with a fourth part of milk, or decoctions of barley, blanched oats, rice, &c. ; to administer emolient clysters, consisting of six parts of warm water, two of oil, and one of soft sugar ; to wrap the suffering part in soft flannel, or, if it can bear the application of heat, to cover the whole with a common poultice, made of the crumb of bread boiled in milk, with the addition of a little sweet oil ; to place the patient, if his peculiar situation and circumstances admit of this practice, in a tepid bath, of a temperature not exceeding 98 degrees of Fahrenheit ; and, lastly, if none of these expedients should afford the desired relief, to resort to opium, or laudanum, as the *last resource* : one grain of the former, or twenty drops of the latter, with a proper quantity of diluent beverage, is generally a sufficient dose to persons not accustomed to its use. But let us here observe, that even in very desperate paroxysms of pain, there is no necessity of giving an indiscriminate preference to opium, till every other method has been previously tried : thus, for instance, the most excruciating head and tooth-ach have often been suddenly dispelled, by applying horse-radish in fresh shavings, or bruised garlick, between two fine pieces of muslin, to the bend of both arms, or the hams.

Another simple remedy of equal efficacy, in periodical head-achs, especially in the morning, is a thin piece of fresh lemon-peel freed from the soft fibrous part, and placed on each of the temples, before the volatile oil be evaporated. These external applications are perfectly safe ; for, as their action is confined



to the part which they stimulate, they occasion a degree of irritation different from the original complaint, and thus produce a cessation of pain. In the last-mentioned case, we would also recommend the *timely* application of a few leeches, either to the temples, or rather to the lateral part of the neck, behind the ears, where the effect is almost instantaneous.

Lastly, opium may be called an almost divine remedy, when judiciously administered, in gangrenes, after painful amputations, fractures of bones, and, in short, every operation attended with spasms and great tration of strength; but especially in diseases of the eyes, such as the cataract, or gutta serena.

### ANTIDOTES.

Antidotes are medicines which prevent or cure the effects of deleterious substances, either taken into the stomach, or externally applied to the human body.

Of those poisons which generally prove mortal, when swallowed, the principal are, arsenic, corrosive sublimate, glass of antimony, verdigrease, and lead. Mineral poisons apparently attack the solid parts of the stomach; and, by coroding its substance, occasion death. Antimonials rather injure the nerves, and destroy by producing convulsions. Most vegetable poisons seem to operate in this manner; but fatal accidents more frequently happen from the former.

In the year 1777, M. Navier advised large quantities of milk to be administered to persons who had swallowed arsenic; a metal, the virulence of which is effectually counteracted by this liquid, as it allays the irritation of the viscera, and prevents the inflammation of the intestines. The patient is afterwards directed to take a dram of the liver of sulphur, in a pint of warm water; but when this cannot be procured, he may substitute a gently alkaline lixivium, or soap-water, a solution of iron in vinegar, or any other acid, or even a portion of ink, if nothing else can be readily procured. The cure may be completed

by the constant use of milk and warm sulphureous waters.

The remedies most suited to obviate the effects of corrosive sublimate, are different preparations of the liver of sulphur, which decomposes or resolves the mercurial salt; and, by the addition of the alkali to the acid, forms an inoffensive neutral salt. Acids, therefore, even of the mildest kind, are fatal, if applied to counteract this poison, as they render it more active: thus, even lemonade, or treacle, are pernicious, as they contribute to increase pain and danger. Common salt dissolved in water, readily precipitates the mercury, and thereby greatly abates its virulence. This article being always ready, it ought to be resorted to preferably to any other; especially as, when taken in a large quantity, it operates as an emetic, or carries off the mercury by stool.

Volatile and fixed alkaline salts and spirits, also precipitate mercury, such as spirits of hartshorn, or sal ammoniac, salt of tartar, wormwood, &c.; but, as these can seldom be obtained on an emergency, the following articles may be substituted, viz. pot-ashes dissolved in warm or cold water, but the lixivium should not be too strong. When pot-ashes are not at hand, warm water may be strained through ashes of bean-stalks, broom, straw, or any other vegetable that can be most readily burned. White or black soap should be injected by way of clyster, and likewise dissolved in all the water that is drunk.

Those poisons which may be called *culinary*, are perhaps the most destructive; because they are generally the least suspected. No vessels, therefore, which contain *copper* in their composition, should be used in cookery, &c. In cases where the poison of verdigrease has been recently swallowed, emetics should first be given, and afterwards cold water gently alkalised, ought to be drunk in abundance.

Though *lead* may not be considered as corrosive poison, its effects are nevertheless deleterious, and may be corrected by the remedies already suggested,

namely, by drinking large quantities of acidulated liquors, or solutions of the liver of sulphur, and completing the cure by gentle laxatives; but, in the commencement of the complaint, drastic purgatives should be carefully avoided.

The poisonous effects of mineral acids may be counteracted by the administration of calcined magnesia. M. Desgranges relieved a soldier in the agonies of death, who had swallowed a glass of the sulphuric acid, or oil of vitriol, by prescribing the following antidote, viz. a dram and a half of the carbonate of magnesia (*magnesia usta aërata*), dissolved in a tea-cupful of pure water. This dose produced excessive vomiting. He repeated the magnesia in the quantity of half a dram every half hour, giving at intervals a solution of gum-arabic and sugar till the cure was accomplished.

To obviate the ill effects of *opium*, emetics should be given as speedily as possible. If the first symptoms only appear, which are the same as those of intoxication, the following emetic will be of service, viz.—Simple spearmint-water and oxymel of squills, of each one ounce, and half a scruple of ipecacuanha: frequent draughts of water-gruel should be given, to assist the operation. If the poison has been swallowed in a liquid state, which may be ascertained from the smell of the first discharge, four or five vomitings may be sufficient; but if in a solid form, two or three more must be procured, by giving fresh doses. Should the symptoms continue violent it will be necessary to increase the quantity of the medicines, in proportion to the urgency of the case, and the strength of the patient. The principal object to be kept in view, according to Dr. Seaman, is, to produce such a degree of irritation, as may counteract the narcotic effects of this deleterious drug. Hence it is very useful to stimulate the nostrils with spirits of hartshorn, and to apply friction with salt over the whole body.

Lemon juice, a solution of white vitriol, and other acid substances, have long been considered as effec-

tual antidotes against opium ; but they do not afford sufficient security.

As we seriously advise all persons in this unfortunate situation immediately to avail themselves of medical assistance, it would be needless to expatiate farther on the subject : we shall only observe, that there is a remedy at once simple and effectual for all kinds of poisons, to be found near every cottage, as well as in the palaces of the great. This is pure water, which, when taken at an *early* period, and in *sufficient quantity*, has the beneficial tendency of diluting and neutralizing most of the poisons introduced into the stomach.

### ON DIET.

Diet, in animal economy, is a regimen or course of living, adapted both to the preservation of health and its recovery, especially from chronical diseases.

The dietetic treatment ought to be conformable to the different constitutions of individuals. Those whose solids are relaxed and weak, should avoid all tough or viscid food, and such as is difficult to be digested. Their nutriment, however, ought to be substantial ; and they should take frequent exercise in the open air. The plethoric, or those who abound with blood, cannot more effectually consult their health, than by a sparing use of whatever is in a high degree nourishing, as fat-meat, rich wines, strong ale, &c. Their aliment should consist chiefly of bread, or other vegetables, and their drink of water, whey, or small beer.

Persons of a lean habit ought to follow a course directly opposite to that before suggested. Those who are troubled with acidity, should live chiefly on solid meat ; and those afflicted with hot alkaline eructations should principally use acid vegetables. Invalids subject to the gout, to low spirits, to hypochondriac, or hysteric disorders, should avoid all flatulent food, as also all salted, or smoke-dried provisions, and whatever is difficult of digestion, or apt to

turn sour and rancid on the stomach. Their food should be light, spare, cool, and of an opening nature.

Another important object to be considered, is the manner of life and age, together with the season and constitution. Those whose inclination, business, or profession lead them to a sedantry life, ought to be more sparing as to the *quantity*, and more attentive to the *quality* of their aliment, than others whose pursuits are widely different, or who are accustomed to take much exercise: the former ought particularly to avoid the use of every thing that is sour, flatulent, rancid, and oppressive to the digestive organs.

Persons liable to particular diseases, should be cautious in eating whatever tends to aggravate them. The gouty, for instance, should avoid drinking rich wines, strong soups, or acids. Those who are subject to the gravel, ought to shun all austere and astringent aliments: nor should the scorbutic indulge in animal food.

The aliment in early life ought to be light, nourishing, and taken frequently, but in moderation: that of adults should be solid, and sufficiently tenacious; the diet proper for those advanced in life should resemble that of infancy. At every period of life, gluttony ought to be sedulously avoided; for, not unlike too great abstinence, it destroys the powers of digestion; but the moderate repetition of aliment is necessary for restoring the continual waste of the body.

Diet ought also to be regulated according to the different seasons of the year; because variations in the atmosphere produce corresponding changes in animal bodies. In consequence of the increased elasticity of the air, in the winter, the fibres are stronger, and better qualified for performing their various functions, and for digesting the stronger kinds of food. If there be no particular reason for the contrary, generous wines, and wholesome ale, together with warm broths and infusions, may be then taken, to promote the insensible perspiration, which is in some degree checked; as the cold air remarkably contracts the cutaneous pores. Some attention should also be paid

to this circumstance, that the perspiration bear a due proportion to the liquid and solid nutriment consumed.

In the spring, the quantity of food ought to be somewhat diminished, and an additional allowance of the liquor usually drunk might be granted. In autumn, similar regulations are to be observed as in the spring; because the moisture and density of the air are nearly the same, and the weather is equally variable; so that perspiration is easily obstructed.—During the summer, health may be most effectually preserved by vegetables and diluent liquors. Considerable care should be taken to abstain from provisions that are heavy and difficult to be digested, but especially from wine and brandy.

The feeble and convalescent ought to eat frequently, and but little at a time: the number of meals should be proportioned to the weakness of their frame:—for it is far less hurtful to a debilitated person to eat a few mouthfuls every hour, than to make two or three *heartly* meals in one day: an exception, however, ought to be made with respect to those who are naturally of a delicate and irritable constitution.

### TYPHUS FEVER.

Typhus is a malignant contagious fever, attended with remarkable prostration of strength. Great disputes have prevailed among physicians respecting the real nature and denomination of this malady; but as the names by which it has been distinguished mostly depended on the different degrees of violence observed in its progress, and a variety of other circumstances, we shall briefly describe this dangerous fever.

Beside the usual febrile symptoms, a typhus is characterised by uncommon dejection, languor, interruption of the animal functions, and weakness of pulse; the tongue appears moist and clean, or covered with a thin white coat; the urine is pale. After a few days, the patient feels anxiety; depression at the pit of the stomach; and becomes delirious; till at

length he is seized with stupor, which frequently terminates in a profound sleep: the excretions by stool and urine pass off involuntarily; and about the 14th, 17th, or 21st day, the scene is often closed with convulsions; though sometimes protracted to a later period.

*Causes*:—Contagion, or infection, by contact with diseased persons; excessive evacuations of every kind; depression of mind; a studious life, attended with nocturnal watching; long subsistence on crude and impure food; putrid effluvia of poisons and hospitals, arising from corrupted substances, stagnated waters, &c.

The event depends entirely on the greater or less violence of the symptoms, and the relative tendency to putrescence: hence, the following are deemed favourable signs: a gentle moisture over the body, especially when succeeded by a moderate looseness; and the strength of the patient appears to be supported by the remedies applied. On the other hand, delirium, continual watchfulness, sickness, and convulsions; cold or clammy sweat, emitting a cadaverous odour; all these are inauspicious omens, especially when the patient lies on his back with his knees drawn up, and the body gliding downward. If the spots, that generally appear about the 11th or 14th day, be of a dark and livid hue, great danger may then be apprehended.

*Cure*:—Abstinence from all animal food, and an immediate removal from a contaminated atmosphere to a clean, dry, and airy situation. If the alimentary canal be oppressed by crudities, either an emetic, or moderate laxative, according to circumstances, should be timely administered. Mild sudorifics, in conjunction with tonics, especially the Peruvian bark, and vegetable acids, conveyed in copious draughts of diluents, with the addition of wine, have generally been found beneficial. If the head be much affected, blisters, applied to the neck, sometimes afford relief. Should the patient, about the 7th, 11th, or 14th day, feel oppression, anxiety, and uneasiness, an eruption

on the neck, chest, or back, may be suspected; in which case, gentle cordials will be proper. Colliquative sweats may be counteracted by the use of generous wine and bark. When the appetite returns, the patient should first subsist on thin chicken and other broths, weak jellies of sago, hartshorn, &c. Thus, slight attacks of this fever may often be removed. But, when it rises to a degree of malignity (such as is often experienced in hot climates, on account of the noxious exhalations during the night), it will be advisable to attend first to the necessary evacuations; after which, the bark, æther, and camphor, should be freely administered with red or Rhenish wines, fixed air, and other antiseptic remedies: if the eyes appear wild, and the speech be quick, blisters, or fomentations of vinegar and warm water, ought to be immediately applied to the feet. Cold bathing, however, has often been attended with more salutary effects. According to the late practice of an eminent physician, the liberal use of the mineral acids, especially of the muriatic, or *spirit of salt*, has proved of the greatest service; but neither this powerful medicine, nor bathing or affusion with cold sea-water, can with safety be ventured upon, without medical advice; for no disease demands more professional sagacity and judgment than the typhus.

### ON HUNGER.

Hunger is an uneasy sensation, occasioned by long abstinence from food, when the body is in a state of perfect health.

Without attempting to specify the different preparations used for the prevention of hunger, we shall merely relate such substitutes as have been recommended on sudden emergencies; together with the most proper means of administering food to persons who have for a considerable time been deprived of aliment.

In times of distress, life may be protracted with less pain and misery, by a moderate allowance of water;



because that fluid counteracts the acrimony and putrid tendency of the humours, while it furnishes the lungs with the degree of moisture essentially requisite to the performance of their functions. It is, however, a matter of serious consequence to such as are exposed to this dreadful calamity, to be provided with the means of alleviating its horrors, when about to undertake a long journey, in which they are apprehensive of a scarcity of provisions.

The American Indians are supposed to use a preparation consisting of the juice of tobacco, and the shells of oysters, snails, or cockles, burnt so as to be reduced to the finest powder. These ingredients are dried, and formed into lozenges of a proper size to be held between the gum and the lip, so that, being gradually dissolved, they obtund or mitigate the sensations both of hunger and thirst.

A more palatable and efficacious substitute for food, however, in a famishing situation at sea, is the powder of salep, which has been judiciously suggested by Dr. Lind, in order that it may form part of the provisions of every ship's company. This powder, together with portable soup, when dissolved in boiling water, forms a rich thick jelly, and one ounce of each article will furnish a whole day's subsistence for an adult. Indeed, from the experiments made on salep, by Dr. Percival, it appears to contain a larger quantity of nutritious aliment, in proportion to its bulk, than any other vegetable matter hitherto known as food. It also possesses the valuable property of suppressing the nauseous taste of salt water; and may thus be of great utility at sea, when fresh water is either wholly, or so far consumed, that the mariners are "put upon short allowance." From the same mucilaginous property, it greatly tends to counteract the acrimony of both salted and tainted meat. When provisions are nearly exhausted, the most beneficial method of using salep in distressing circumstances will be, to mix it with an equal quantity of beef-suet, and form the whole into little balls. By swallowing this composition, at proper intervals, the coats of the stomach will be de-

fended from irritation : and, these balls, like other oily and mucilaginous matters, being highly nutritive, and slowly digested, small portions are well calculated to support life, and thus to form an efficacious preservative against the most dreadful calamity that can possibly happen to mankind. Gum arabic is likewise a good substitute for, or addition to, salep, in the preparation above-mentioned; and, as it renders the whole mass more solid, it will require a degree of mastication, by which the saliva is separated and conveyed into the stomach; while it contributes to assuage the pains, both of hunger and of thirst.

In attempting the restoration of those unfortunate persons who have endured the horrors of famine, we recommend the utmost precaution. Warmth, cordials, and the most nourishing broths, or jellies, are to be administered gradually, and with great circumspection; for otherwise, even these might prove fatal. The most judicious mode of communicating warmth to the exhausted patient, will be to place a healthy person on each side in contact with him. Bathing the feet in warm water, and fomentations, may be advantageously employed; but their temperature ought to be lower than that of the human body, and imperceptibly increased. New milk, weak broth, or water-gruel, may be used for both purposes, as well as in repeated clysters; because nourishment may, in this manner, be effectually conveyed into the body by different passages, which are most pervious during a state of long abstinence; provided the means of relief have not been too long delayed. Cordials should at first be given in very small doses, and much diluted: one of the best preparations is white-wine whey, which affords both a gentle stimulus and easy nutriment. When the patient's stomach acquires a little strength, a new-laid egg may be mixed with the whey, or given in some other form that may be more agreeable to his palate. Thus, he may progressively return to a more substantial diet; so that, by proper care and cheerful society, he will in a short time be restored to health.

## ON THE JAUNDICE.

The Jaundice is a disease in which the skin and eyes are yellow; the feces of a whitish colour; and the urine of a dark red hue, tinging cloth, or other substances immersed in it, of a yellowish shade.

Various causes produce this obstinate disease; such as a very diluted and acrid state of the bile; indurated swellings of the intestines; the colic, when occasioned by eating unripe fruit; accumulations of humours near the liver; suppression of the natural evacuations, &c. It may also arise from coarse and unwholesome food; as well as from the effects of fear, terror, anger, or any other passion; and likewise from suddenly drinking cold water, while the body is overheated.

Persons of a sedentary life and sanguine temperament, especially females, are liable to be attacked by the jaundice. Even infants become subject to the disease, if the breast be given them while the mother is under the influence of passion.

The chief object in curing the jaundice is to remove the cause which occasions the accumulations of bile and humours at the liver; but, as it is very difficult to ascertain the precise nature and operation of that cause, various means ought to be employed, as circumstances may require. If, however, the jaundice arise from indurated swellings in the viscera, it is seldom curable; yet, as this symptom cannot always be discovered, the most judicious method will be that of treating the disorder conformably to the manner practised in calculous affections, or the stone; with a view to dissolve the concretions, and to prevent their future accumulation. For this purpose, gentle emetics should be frequently taken, and constant exercise on horseback; which, from their concussion of the viscera, dislodge the obstructing matter, and thus remove the complaint. But, if there be any tendency to inflammation, the patient ought to lose a little blood, previously to taking any emetics. Should,

however, no relief be obtained after two or three vomits have been administered, it will be advisable to delay their repetition.

Honey, antiscorbutics, aromatics, bitters, blisters applied to the regions of the liver, have all been found serviceable in the cure of the jaundice. But, if these remedies fail, as in cases of scirrhus and glandular concretions, recourse can only be had to such medicines as may palliate the symptoms. Of this nature are *diuretics*; though, if the pain or irritation of the skin be violent, opiates must be resorted to; and, if the blood has a tendency to dissolution, it must be counteracted by proper antiseptics, conjoined with the internal use of sal ammoniac.

When the disorder is suspected to arise from a rheumatic cause, the sulphurated oil of turpentine, in combination with vitriolic æther, has been successfully prescribed; this is a powerful medicine, and has even expelled biliary concretions. Should this cause, however (as often happens), spontaneously disappear, it will be advisable to prevent its return by a course of tonic remedies, and especially the Peruvian bark.

The waters of Harrogate, Bath, and Pyrmont, have been found very serviceable in this complaint; but should the patient have no opportunity of bathing in them, affusions of common water may be advantageously substituted.

The diet of persons affected with the jaundice ought to be light, cool, and diluent; consisting chiefly of ripe fruits and mild vegetables: many have been effectually cured by living for several days on *raw eggs* alone. Butter-milk, whey sweetened with honey, or decoctions of marsh-mallow roots, and other aperient vegetables, ought to constitute the whole of their drink. Gentle and daily exercise in the open air ought by no means to be neglected; while the mind should be kept serene and cheerful.

## ON HEAD-ACH.

Head-ach is a painful sensation in the head, produced by various causes, and attended with different effects, according to its various degrees, and the part of the head where it is situated.

Head ach, in general, is only a symptom of disease, and frequently occasioned by effusions of blood on the brain, as also by ulcers, accretions, &c. on that sensible organ. Persons of a sedentary life, or those subject to costiveness or indigestion, are more peculiarly liable to the attacks of the head-ach. An acrimonious state of the fluids; the stone; catarrhs; contusions on the head; a diseased state of the teeth; piles; hysterics; strong odours of every kind; the fumes of tobacco; rheumatism; gout; scurvy; worms both in the intestines and in the head; too much hair; grief; and intoxication, are among the numerous causes of this affection, which is sometimes so violent as almost to deprive the unhappy sufferer of his senses.

Where the head-ach originates from an internal cause situated within the brain, it is seldom curable. In nervous affections, relief may sometimes be procured by venesection, cupping, or leeches; by sneezing remedies, blisters, issues, or other topical discharges near the head; by purgatives; or by determining the fluids to other parts. Frequent combing and cutting of the hair, as well as bathing the feet in tepid water, will likewise be found very serviceable. A poultice of elder flowers applied to the part affected has been sometimes attended with good effects, as also has the holding of a piece of hellebore in the ear.

According to Thunberg, Cajeput oil, applied to the head, will afford considerable relief. Similar success has attended the application of æther and spirits of hartshorn as a sternutatory, and as a local remedy. It is asserted, that the most acute and obstinate head-achs have been removed by the use of vervain, both internally in the form of a decoction, and also by sus-

pending the herb round the neck. Strong coffee has likewise been of considerable service, especially to phlegmatic habits, and those whose digestion is impaired.

The diet of persons afflicted with the head-ach ought to consist of such emollient substances as will prevent costiveness; for instance, stewed prunes, apples, spinach, &c. Their feet and legs should be kept warm; and the head shaved, frequently bathed with warm water and vinegar, retaining it as much as possible in an erect posture.

### ON HEART-BURN.

Heart-burn is an uneasy sensation of heat in the stomach, which is frequently attended with nausea and sickness.

The heart-burn generally arises from a prevailing acidity, indigestion, the eating of tough fat meat, and unfermented mealy substances. Those persons who are subject to this affection ought to drink no stale or acid liquors, and to abstain from flatulent food.

If indigestion, or debility of the stomach, be the cause, the patient may take infusions of Peruvian bark, valerian, or any other stomachic bitter. Moderate exercise in the open air will contribute to promote digestion, and consequently remove the complaint.

Should the heart-burn originate from the acidity of the stomach, the general practice is to administer absorbent medicines, such as prepared chalk, crab's claws, calcined oyster-shells, &c. a tea-spoonful of either being given in a glass of peppermint-water, which frequently procures relief.

There are, however, many cases in which absorbents tend to aggravate rather than to cure this troublesome affection; namely, when it proceeds from an acrid and empyreumatic oil generated on the stomach. In such instances, a tea-spoonful of the powder of gum-arabic dissolved in half a tea-cupful of water, and re-

peating this dose three or four times, if necessary, has been attended with immediate success; and, where the gum cannot be procured, a few blanched sweet-almonds, finely chewed and swallowed, have often produced a similar effect.

### ON CHILBLAINS.

Chilblain is a small tumour, or ulcer, in the hands, feet, heels, &c. It is occasioned either by exposing warm parts too suddenly to a cold temperature; or by holding the hands, or feet, when extremely cold, too precipitately to a considerable degree of heat. Such affections always have a great tendency to mortification, in which they frequently terminate.

Children of sanguine habits; and delicate constitutions, are most liable to chilblains; which may be prevented by such remedies as invigorate the system; by wearing flannel socks from the beginning of September to the latter part of spring, and occasionally taking gentle laxitives when they are disposed to become costive. All these precautions, however, will be attended with no benefit, if young people are suffered to repair to the fire immediately after coming from the most severe external cold.

In the commencement of this painful complaint, the cure is easy: immerse the part affected, several times a day, for a few minutes, into cold water, and guard against sudden vicissitudes of heat and cold, as either are equally hurtful. But, if simple water procure no speedy relief, dissolve an ounce of salt-petre in half a pint of vinegar and an equal quantity of water, and foment with it the part affected every night. When the tumours will not yield to these applications, and still remain in a swelled and painful state, without producing ulceration, a few drops of the pure tincture of *benzoin* may be rubbed occasionally on them; and the parts should be defended against the external air, by soft linen cloths: from this simple treatment, the best effects have been experienced.

## ON SCROPHULA.

Scrophula, or Evil, is a swelling of the conglobate glands, particularly about the neck and ears; though sometimes extending to the arm-pit and the groin. In its progress, the joints and bones are liable to be affected.

Scrophulous tumours may be distinguished from scirrhus, by their soft and moveable state; they sometimes disappear in one part, and rise again in another. This complaint, however, is not confined to the external parts, but occasionally attacks the lungs, mesentery and other organs; in which cases a swelling of the upper lip will indicate the concealed evil. Children afflicted with this malady are generally of a florid complexion; they have a soft skin and tumefied abdomen: such individuals attain to a maturity of understanding superior to others of the same age. In some countries, the disease is endemial: thus, it is uncommonly prevalent in Britain, Holland, Switzerland, and Carinthia.

Scrophula often frustrates the efforts of the healing art; though it seldom proves fatal, while it is confined to the external glands; but, if it extend its influence to the pulmonary organs, it frequently produces tubercles, and eventually consumption. When the joints are diseased, it occasions tumors, stiffness of the limb, ulcers, decay of the bones, and often emaciation of the body, till death closes the fatal scene.

*Causes* :—Whatever tends to produce a viscid lymph, and to debilitate the constitution in general, such as coarse and acid diet, especially pastry; moist air; damp habitations; colds; want of exercise; impure water; and the vitiated milk of nurses; all may engender the evil. Farther, when the scrophulous taint is once introduced into the constitution, it generally appears after the small-pox, measles, and even in consequence of external injuries. Whether this disorder be hereditary and contagious, is a point on which the opinions are divided; but whether it may, or may not, be communicated by contact, prudence



would dictate, that healthy children should not be suffered to sleep with scrophulous persons.

*Cure* :—A great variety of remedies has been devised for removing scrophula: the principal difficulty in extirpating this malady, however, arises from the circumstance, that it may remain concealed for a long time, and thus become deeply rooted in the constitution, before its effects are evident. Hence, we shall confine our account to such remedies as have generally been attended with salutary effects.

In order to resolve the viscid lymph, and to strengthen the system, the use of Peruvian bark, in the state of powder, combined with hemlock, forms an excellent remedy; but the proper doses ought to be regulated by a medical practitioner. Sea-water and sea-bathing, as well as moderate exercise, especially in a warm, serene atmosphere, are alike conducive to recovery. During this course, the bowels should be gently and regularly opened; the diet ought to be light, consisting of nutritive food, easily digestible; and the sleep must also be moderate, not exceeding seven or eight hours in adults, and nine or ten hours in children. Frictions will be serviceable, by promoting the circulation of the fluids, and tending to strengthen the solids. Hemlock-plasters applied to the tumors, and burnt sponge combined with small portions of black pepper, taken before breakfast, have frequently been of service in reducing them, especially if assisted by sea-bathing. Mercurials and antimonials are powerful, though precarious remedies; and, if the former be employed in consequence of medical advice, they should never be given in such quantities as to induce salivation, which would doubtless aggravate the disorder. Milk-whey, with the *dead-nettles*, has also occasionally been found useful.

If, however, none of the medicines here enumerated have the effect of dispersing the swellings; on the contrary, if the *suppuration* of the tumors be likely to ensue, they should never be opened till the tumid indurations are softened; or, it will be more safe and advisable to suffer them spontaneously to break, with-

out any any application of emollient, or other poultices; as the subsequent healing of the ulcers will thus be greatly promoted.

The *nitric acid* has lately been extolled as an efficacious remedy against hard indolent swellings, and particularly those of a scrophulous nature: in the latter cases, it is given according to the age of the patient, in doses of from 20 to 60, and even 80 drops, in water sweetened with honey, and which must be taken gradually in the course of 24 hours.

Should it occasion nausea, and injure the enamel of the teeth, these inconveniencies may be remedied by diminishing the number of drops, and adding more sugar or honey. In some instances, this acid has proved beneficial; but it requires more time positively to ascertain its effects.

### ON DROWNING.

Drowning is the act of suffocating, or being suffocated, by a total immersion in water. The length of time during which a person may remain in this element, without being *drowned*, is very unequal in different individuals, and depends as much on the temperature of the water as on the particular constitution of the subject: in general, however, there is less prospect of recovery, after having continued fifteen minutes in a watery grave. In such cases, death ensues from impeded respiration, and the consequent ceasing of the circulation of the blood, by which the body loses its heat, and with that the activity of the vital principle. Dr. Goodwyn justly observes, that the water produces all the changes which take place in drowning, only *indirectly*, by excluding the atmospheric air from the lungs, as they admit but a very inconsiderable quantity of fluid to pass into them during immersion. Hence we find, that inflation of the lungs is one of the principal means of restoring life.

Previous to any *active* measures being taken for recovering drowned persons, the following circumstances ought to be duly weighed by those engaged

in this humane office:—1. The season and weather. 2. Length of time the person has continued under water. 3. The state of his mind when the accident happened; whether he was intoxicated, frightened, &c. 4. Constitution of the body, and whether he was in a state of perspiration. 5. The height from which he fell, and whether his head plunged foremost. 6. Depth of the water; whether it was cold or warm, sea, or river water, and how he was dressed. Lastly, 7. The manner in which he was taken out, whether by the legs, and without receiving any injury, or by instruments; and whether he was rolled about in a tub, or what other methods were pursued for his restoration.

Few improvements appear to have been made in the treatment of the drowned, since this important branch of medical science was first discussed. We shall briefly state the principal rules of conduct to be observed, with respect to persons in that deplorable situation.

*Symptoms of Apparent Death by Drowning.*—Coldness; paleness of the whole body; the lips of a livid hue; the mouth either open or firmly closed; the tongue blue, swelled and protruded; the eye-lids closed, the eyes turned, and their pupils dilated; the face swelled and blue; the lower belly hard and inflated. The first signs of returning animation are, convulsive starting of the muscles of the face, or feet; motion of the eye-lids; a spasmodic shivering of the body.

*Treatment.*—1. After having been carefully taken out of the water by the arms, so as to prevent the least injury to the head and breast, the body ought to be carried to the nearest house, in a bier if possible, with the head somewhat raised; or, in fine warm weather, the resuscitative process may with more advantage be performed in the open air, especially in sun-shine.

2. When the subject is deposited, the upper part of the body should be supported half-sitting, with the head inclining towards the right side.

3. The clothes are to be taken off without delay, but with the greatest precaution; as violent shaking of the body might extinguish the latent spark of life.

4. The mouth and nose must be cleansed from the mucus and froth, by means of a feather dipped in oil.

5. The whole body should now be gently wiped and dried with warm flannel cloths, then covered with blankets, feather-beds, hay, straw, &c. In cold or moist weather, the patient is to be laid on a mattress or bed, at a proper distance from the fire, or in a room moderately heated; but in the warm days of summer, a simple couch is sufficient.

6. If the patient be very young, or a child, it may be placed in bed between two persons, to promote natural warmth.

7. In situations where the bath cannot be conveniently procured, bladders filled with lukewarm water should be applied to different parts of the body, particularly to the pit of the stomach; or a warming-pan wrapped in flannel gently moved along the spine; or aromatic fomentations frequently and cautiously repeated.

8. As the breathing of many persons in an apartment would render the air mephitic, and thus retard, or even prevent the restoration of life, not more than five or six assistants should be suffered to remain in the room where the body is deposited.

*Stimulants generally employed:*—1. Moderate friction with soft warm flannel at the beginning, and gradually increased by means of brushes dipped in oil till pulsations of the heart are perceptible.

2. Inflation of the lungs, which may be more conveniently effected by blowing into one of the nostrils, than by introducing air into the mouth. For the former purpose, it is necessary to be provided with a wooden pipe, fitted at one extremity for filling the nostril, and at the other for being blown into by a healthy person's mouth, or for receiving the muzzle of a pair of common bellows, by which the operation may be longer continued. At first, however, it will always be more proper to introduce the warm breath

from the lungs of a living person, than to commence with cold atmospheric air. During this operation, the other nostril and the mouth should be closed by an assistant, while a third person gently presses the chest with his hands as soon as the lungs are observed to be inflated.

3. Stimulating clysters, consisting of warm water and common salt, or a strong solution of tartar emetic, or decoctions of aromatic herbs, or six ounces of brandy, should be speedily administered. We do not consider injections of the smoke of tobacco, or even clysters of that narcotic plant, in all instances safe or proper.

4. Let the body be gently rubbed with common salt, or with flannels dipped in spirits; the pit of the stomach fomented with hot brandy, the temples stimulated with spirit of hartshorn, and the nostrils occasionally tickled with a feather.

5. Persons of a very robust frame, and whose skin after being dried assumes a rigid and contracted surface, may be put into a sub-tapid bath, of about  $65^{\circ}$ , which must be gradually raised to  $75^{\circ}$  or  $80^{\circ}$  of Fahrenheit's scale, according to circumstances; or the body carried to a brewhouse, and covered with warm grains for three or four hours; but these expedients generally require medical assistance.

6. Violent shaking and agitation of the body by the legs and arms, though strongly recommended, and supposed to have often forwarded the recovery of children and boys, appears to us a doubtful remedy, which can be practised only in certain cases.

7. Sprinkling the naked body of a drowned person with cold water; submitting it to the operation of a shower bath, or the sudden shocks of the electric fluid; as well as whipping it with nettles, administering emetics, and blood-letting, are desperate expedients, which should be resorted to only after the more lenient means have been unsuccessfully employed.

It is, however, a vulgar and dangerous error to

suppose that persons apparently dead by immersion under water are irrecoverable, because life does not soon re-appear : hence we seriously entreat those who are thus employed in the service of humanity to persevere for three or four hours at least in the application of the most appropriate remedies above described ; for there are many instances recorded of patients who recovered after they had been relinquished by all their medical and other assistants.

*Treatment on the return of life :—*As soon as the first symptoms of that happy change become discernible, additional care must be taken to cherish the vital action by the most soothing means. All violent proceedings should, therefore, be immediately abandoned, no farther stimulants applied, nor even the ears of the patient be annoyed by loud speaking, shouting, &c. At that important crisis, moderate friction only is requisite. And, if the reviving person happen to be in the bath, he may either remain there, provided his sensations be easy and agreeable, or be removed to a comfortable bed, after being expeditiously dried with warm flannels : fomentations of aromatic plants may then be applied to the pit of the stomach ; bladders, filled with warm water, placed to the left side ; the soles of the feet rubbed with salt ; the mouth cleared of froth and mucus, and a little white wine, or a solution of salt in water, dropped on the tongue. But all strong stimulants, such as powerful electric shocks, strong odours of volatile salts, &c. are at this period particularly injurious. Lastly, the patient, after resuscitation, ought to be for a short interval resigned to the efforts of Nature, and left in a composed and quiescent state : as soon as he is able to swallow, without compulsion or persuasion, warm wine, or tea, with a few drops of vinegar, instead of milk, or gruel, warm beer, and the like, should be given in small quantities frequently repeated.

## ON FRICTION.

Friction is the act of rubbing a diseased part with oils, unguents, and other matters, in order to ease, relieve, and cure it.

Friction is also performed with a flesh-brush, a linen-cloth, or with flannel; which last is the most eligible. It is a kind of exercise that remarkably contributes to the health of sedentary persons; for it excites and kindles the natural warmth; diverts defluxions; promotes perspiration; opens the pores; and tends to dissipate stagnant humours.

This operation is particularly beneficial to the nervous, debilitated, and studious; being an useful substitute for other exercise. Hence we recommend to such individuals to spend half an hour every morning and evening in rubbing their whole body, especially their limbs, with a clean piece of flannel. It ought, however, to be observed, that this practice will be of the greatest service when the stomach and bowels are empty.

Lastly, we venture to affirm, that the most important purposes to which *friction* may be rendered subservient in the animal economy, have hitherto been almost entirely neglected: we are, however, convinced from experience, that *medicated frictions*, or the introduction of the most active medicines into the human system, by rubbing them in properly on the surface, might be attended with the most happy effects, especially in all chronic diseases. Common sense appears to have long since pointed out this excellent method of administering medicines, even to the Indian savages, though it is little practised in enlightened Europe, where the *stomach* is doomed to be the field of battle for deciding commotions and irregularities in our complicated frame. But who is hardy enough to maintain, that the digestive organ was by Nature destined to be the exclusive vehicle of drugs, and to serve as their common-laboratory?

## ON SWOONING.

Swoon is a sudden fainting, in which the action of the heart is diminished, or for a time entirely suspended. It is generally preceded by anxiety, difficult respiration; the pulse being low and tremulous; the patient turning cold and pale, so that he is nearly deprived of all sensation. In some instances, these symptoms are more urgent; the limbs are flexible, but exhausted of their strength; and the whole body is in a state of deadly cold torpor. It is remarkable that patients, during the fit, often hear the whole conversation respecting them, but feel the want of power to exert themselves: the recovery is, in most cases, announced by deep and heavy sighs.

When swooning occurs in the commencement of acute disorders, it is generally an unfavourable omen; though, in the advanced stages, it is less alarming: in violent bleedings, it frequently affords relief; but when faintings occur, without any apparent cause, there will be just apprehension of danger.

*Causes*:—Long continued exertions of the mind, such as deep study; violent passions; loss of strength from profuse evacuations, particularly of blood; pain; hunger; want of rest; surfeits; impure air; worms; narcotic poisons; and affections of the interior organs.

*Cure*:—The patient should immediately be exposed to the open air, and be sprinkled with cold water on the neck and face. Strong pungent odours, or volatile spirits held to the nostrils, ought to be used with caution; and only where the strength of the patient has been considerably reduced, especially in hysterics and hypochondriasis; in these cases, spirit of harts-horn, tincture of valerian, castor, or asafoetida, may be inhaled with advantage. If the swooning originate from anger, and be attended with nausea, vomiting, bitter taste, and pain at the pit of the stomach, a gentle emetic may be given, with copious draughts of warm chamomile tea: similar means may likewise be employed, in consequence of a surfeit. Persons of a



plethoric habit, when fainting from violence of passion, ought immediately to lose a few ounces of blood from the arm; and afterwards take a cooling aperient, for instance, infusions of senna, tamarinds with manna, salt, &c. If it arise from excess of pain, benefit may be derived from opium; and, when it is occasioned by a fit of terror, or a sudden fright, first blood-letting, then small doses of laudanum and antimonial wine (from five to ten drops of the former, and double that proportion of the latter), will tend to compose the nerves, and to promote perspiration. When the fit of swooning is the effect of too violent purgatives or emetics, a few drops of the tincture of opium, in conjunction with an aromatic wine, will prove the most proper remedy.

In cases of great debility, it will be necessary to abstain from all stimulating food or drink, and to use the mildest astringents, in combination with a bland and nourishing diet. During the paroxysm, frictions of the extremities with hot flannels will greatly assist the recovery of the patient.

#### ON COLDS.

Catarrh, or Cold, is a disease arising generally from a sudden diminution of insensible perspiration, by exposing the body to a damp or cold air, after having been for some time under the influence of a warmer temperature. It is at first attended with an increased secretion of mucus from the glands and membranes of the nose, eyes, throat, windpipe, &c.; hence a defluxion of a thin acrid humour, which irritates those glands and membranes, occasions some difficulty of breathing through the nose, with a sense of fulness, and sooner or later produces all the usual symptoms of a common cold. Contrary to the prevailing opinion, we are convinced that bleeding is seldom if ever necessary in these and similar affections. As, however, catarrhs are sometimes attended with a slight degree of inflammation and fever, their treatment must be regulated accordingly; but, if unaccompanied with

febrile symptoms, there is no danger to be apprehended. In the latter case, only, we shall suggest a few directions for managing those frequent complaints, which are generally neglected at their commencement.

It was formerly maintained, that *all* colds may be cured by *sudorific* remedies; but experience has proved that this method, though sometimes successful, has often been productive of injury. In modern times the opposite treatment has been adopted, and both the internal use and external application of cold water have been indiscriminately recommended. The true and proper plan, however, appears to be the medium between these extremes; for it cannot be doubted, that keeping the body too warm, and excessive indulgence in hot diluent drink, predispose it to catarrhs; as, on the other hand, the internal and external use of cold water tends to strengthen the whole animal frame, and renders it less susceptible of the impressions of air and cold. But, unfortunately, the *preservative* means have, in this instance, been confounded with the *curative*, or those intended for effecting the cure. Hence, in the beginning of every catarrh, the following particulars deserve attention:

1. To dilute and weaken the acrid humor, secreted by the glands: this purpose may be attained by inhaling the steam of water, and drinking proper quantities of warm diluents.

2. To prevent too great a defluxion of humors, or to render the mucus itself milder, and facilitate its excretion, it will be of great advantage to apply vesicatories contiguous to the parts most affected by the cold.

3. To evacuate the concocted or digested matter: this salutary effect is accomplished either by spontaneous defluxion, or by the pores and urine. Both must be principally intrusted to Nature; as we should assist and direct her operations only in the mildest and most cautious manner.

Dr. Mudge, in a treatise on this disease, recommends the steam of hot water as a most efficacious and safe remedy, and which indeed he considers as

almost *infallible*. The method of inhaling these steams is very simple; but he observes that, for healthy persons who may accidentally see his machine, great precaution is necessary not to make the experiment of respiring through cold water; as thus they would be almost certain of contracting a severe cold. For those troubled with a catarrh, he directs as follows: In the evening, a little before bed-time, the patient, if an adult, is to take three drams, or as many teaspoonfuls of paregoric elixir, in a glass of water: but, if a child under five years of age, one teaspoonful; or, from five to ten years old, two. About three quarters of an hour after, the patient should go to bed, and, being covered warm, the inhaler three parts filled with water, nearly at the boiling point (which from the coldness of the metal, and the time it ordinarily requires before it is used, will be of a proper temperature), and being wrapped up in a napkin, but so as not to obstruct the valve in the cover, which is to be placed at the arm-pit, and the bed-clothes being drawn up, and over it, close to the throat, the tube is to be applied to the mouth, and the patient should inspire and expire through it for about twenty minutes or half an hour.

It is very evident, says Dr. Mudge, as the whole act of respiration is performed through the machine, that by inspiration the lungs will be filled with air, which will be hot, and loaded with vapour, by passing through the body of water; and in expiration, all that was contained in the lungs will, by mixing with the steam on the surface of the water, be forced through the valve in the cover, and settle on the surface of the body, while under the bed-clothes.

The great use of this particular construction of the inhaler is, 1. As there is no necessity at the end of every inspiration to remove the tube from the mouth, in order to expire from the lungs the vapour which had been received into them, this machine may therefore be used with equal facility by children and adults. 2. As febrile symptoms frequently accompany the disorder, the valve, in that respect, is also of the utmost

importance: for a sweat, or at least a free perspiration, not only relieves the patient from the restless anxiety of a hot, dry, and sometimes parched skin, but is, of all evacuations, the most eligible for removing the fever; and it will be generally found, that, after the inhaler has been used a few minutes, the warm vapour under the clothes will, by settling upon the trunk, produce a sensible perspiration, which will gradually extend itself to the legs and feet.

In any feverish habit attending this cough, it would be proper to take a draught of warm thin whey a few minutes before the inhaler is used; and after the process is over, the sweat which it has occasioned may be promoted by drinking small draughts of weak warm whey, or barley-water. The sweating is by no means so essential to the cure of a catarrhus cough, as that the success of the inhaler at all depends upon it; yet the Doctor observes, that its advantages are very important when the disease is accompanied by febrile symptoms.

After this respiratory process is performed, the patient generally passes the night without the least interruption by the cough, and feels no farther attack than perhaps once or twice in the following morning, to throw off the trifling leakage which, unperceived, had fallen into the bronchiæ and vesicles during the night; the thinner parts of which being evacuated, the remainder is easily expectorated.

However, continues Dr. Mudge, if the patient hopes not to be disappointed in the success of this process, it is essentially necessary that he strictly attend to the following rules:

1. As valetudinarians are but too well acquainted with the first symptoms of this disorder, the remedy must be used the same evening; which will, in an ordinary attack, be attended with an immediate cure: but if the soreness of the respiratory organs, or the petulance of the cough, indicate the severity of the cold, the inhaler, without the opiate, should be repeated the next morning.

2. If the use of this apparatus, &c. be delayed till

the second night, it will be always proper to repeat the process on the following morning, without the opiate, except where the attack has been violent.

3. Should the cough be neglected for some days, it will always be necessary to employ both parts of the process at night, and the succeeding morning, as the first simple inflammatory mischief is now most probably aggravated by an additional disease of a chronic nature. But if this should be omitted, and the cough continue to harass the patient, it is of the utmost consequence, particularly in delicate and tender individuals, to attempt the removal of it as soon as possible, before any floating acrimony in the constitution (from the perpetual irritation) receives an habitual determination to an organ so essential to life as the lungs.

If the patient, with ease and freedom, expectorates a thick and well digested inoffensive phlegm, there is generally but little doubt of his throwing off the disorder, with common care, in a few days; and till that be accomplished, a proper dose of paretoric elixir, for a few successive nights, will be found very useful in suppressing the fatiguing irritation, and ineffectual cough, occasioned by a matter which, in the early stage of the disease, flows into the bronchiæ during the night, and is generally too thin to be discharged by those convulsive efforts. But should the cough still continue, notwithstanding a *free* and *copious* expectoration, and the discharge, instead of removing the complaint, become a disease greater than the constitution can support, it is possible that a tender patient, possessed of weak and relaxed lungs, may do himself irreparable injury, without the least appearance of purulence, or any suspicion of suppuration. In those cases, besides increasing the general perspiration by the salutary friction of a flannel waistcoat, change of situation, especially long journeys on horseback, conducted as much as possible through a thin, sharp, dry air, will seldom fail to remove the complaint. On the contrary, if the cough should continue dry, husky, without expectoration, and fa-

tiguing to the breast, provided there be no apprehension of tubercles, either forming or already formed, there is not, perhaps, a more efficacious remedy for it than half a dram of gum ammoniac, with eighteen or twenty drops of liquid laudanum, made into pills, taken at bed-time, and occasionally repeated. This excellent remedy was recommended by Sir John Pringle, and Dr. Mudge observes, that he has, in many instances, found it to be very successful, and generally expeditious; for it almost uniformly produced an expectoration, and abated the distressing fatigue of the cough. The latter practitioner has, likewise, in many instances, known a salutary revulsion made from the lungs, by the simple application of a large plaster, about five or six inches in diameter, of burgundy pitch between the shoulders; as the perspirable matter, which is pent up under it, becomes so sharp and acrid, that it generally produces, in a few days, a very considerable itching, some little tendency to inflammation, and frequently a great number of boils. This application should be continued (the plaster being occasionally changed) for three weeks, a month, or longer if necessary.

Although seemingly a trifling precaution, yet it is by no means a useless one, to the patient, not to expose his shoulders to the cold air while in bed, during the night; but to take care that they be kept warm, by drawing the bed-clothes up to his neck when he reposes.

If, notwithstanding these and other means, the cough should continue dry, or be unattended with a proper expectoration, and together with a soreness produce shooting pains through the breast, and between the shoulders, accompanied with difficulty of breathing, flushes of the cheeks after meals, a burning sensation in the hands and feet, and other symptoms of a hectic fever, no time must be lost, as there is the greatest reason to apprehend that some acrimony in the habit is determined to the tender substance of the lungs, and that consequently tubercular suppurations will follow. In this critical and dangerous situation,

the Doctor observes, from long experience, that the patient will derive the greatest benefit from a change of air, and by strictly adhering to a diet consisting of asses' milk and vegetables.

### ON THE TEETH.

The Teeth is a set of bones, situated in the upper and lower jaws, for the purpose of mastication: in adults, there are 32 in number, or 16 in each jaw-bone.

The teeth are of various size, being arranged in the following order: *four* in the front, termed cutting teeth, on each side of which is a sharp-pointed, canine, or *eye-tooth*; adjoining to these are *five* grinders on each side, the last of which is denominated the tooth of wisdom, because it seldom appears before the 25th year. The front and eye-teeth are furnished with only one root each; the two first grinders with two; and the hindmost generally with three or four; which may in most persons be ascertained by the number of small tubercles on the crowns.

The tooth is divided into two principal parts; namely, the *crown*, which projects above the gums; and the *root*, that is inclosed within the sockets: the crown is a hard, fine, glossy, white *enamel*, serving to defend the substance against external injury: the root is open at the bottom, where it is connected with vessels and nerves, by which it receives nourishment, life, and sensation.

As an account of the manner in which the teeth are formed may prove interesting to reflecting readers, we shall proceed to state concisely the process of *dentition*, or teething; and conclude with a short analysis of the *diseases* to which these useful bones are frequently liable.

In an embryo of three or four months formation, instead of the sockets, small cells are observable: these are separated by thin membranes, each of which progressively exhibits a vascular bag, containing a soft knob, that is covered by the rising tooth, forming

a hard coat; but the enamel appears to originate from crystalized matter. During the first year, the two middle front teeth in the under jaw, and shortly after the two upper ones, become visible; they are succeeded by the foremost front teeth. In the commencement of the second year, the first grinder on each side grows successively in the under and upper jaws: the next in rotation are the canine or corner teeth, and finally, about the third year, there rise from two to three grinders on each side. About the seventh year, all these teeth are, by an effort of Nature, gradually replaced by a new set, to which are joined, in the tenth or eleventh year, another grinder, and at a later period the tooth of wisdom.

During the progress of dentition, children are subject to various affections, such as convulsions, inflammation, fever, &c. occasioned by the pressure of the teeth in bursting through the gums. At this period, a moderate looseness, or a copious flow of saliva, are, in general, favourable signs. With a view to promote the latter, it will be advisable to let the child chew or gnaw such substances as have a tendency to mollify the gums, and, by their pressure, to facilitate the protrusion; for which purpose a piece of liquorice or marsh-mallow root, &c. will be of service; or, the gums may be softened and relaxed by rubbing them with sweet oil, honey, or other emollients. Costiveness should be removed by mild aperient clysters. If, however, all these endeavours prove ineffectual, relief has often been derived from an incision made in the gum; though such operation should be undertaken only by the surgeon. In cases of extreme weakness, the application of blisters behind the ears, or to the back, will prove beneficial; and, as distressing symptoms frequently arise from crudities and obstructions in the first passages, it will be necessary to attend to this circumstance: thus, if the child be troubled with acidity and flatulence, the testaceous powder, or calcined magnesia with a few grains of rhubarb, mixed with powder of sweet fennel-seeds, will form a very useful remedy.



With respect to the *diseases* of the teeth, we shall mention only such as occur more frequently, and which are, by proper attention, or by external application, easily removed. From a view of the nature and formation of the teeth, it must be evident, that whatever may tend to remove the enamel, for instance, *acrid* dentrifices and tinctures, hard metallic tooth-picks, sudden changes from heat to cold (especially in taking food), by exposing the nerve, cannot fail to produce the *tooth-ach*; and, in the course of time, a *decay* of the bone itself. There are even instances where such corruption, unless timely checked, has extended its influence to the jaw-bone. Nothing, however, contributes to injure them more certainly than uncleanness; by which a kind of tartar is generated, that settles on the teeth, and separates them from the gums: thus, the air and the food coming into immediate contact with the bony substance, will prove a never-failing source of pain and distress.

*Cure*:—As it would be a vain attempt to point out any *specific* by which the tooth-ach can be removed, we shall recommend only such remedies as are adapted to the several causes from which it may originate. If the patient be of a plethoric habit, or the gums be considerably inflamed, recourse should be had to bleeding, particularly by leeches and cupping-glasses, applied contiguously to the part affected: next, blisters behind the ears, or on the nape of the neck, will be found of service. Dr. Cullen recommends vitriolic æther to be dropped on the cheek, and to hold the hand on the part till that volatile liquor be evaporated. Should, however, the pain still continue, without intermission, a few drops of laudanum on cotton, laid on the tooth, will sometimes afford relief. Where the bone is hollow, and decayed, it will be advisable either to have it drawn by an able dentist, or to resort to such substances as destroy the nerve: the latter object may be effected by a careful application of the strong mineral acids, juniper-oil, or by a red-hot wire; but this operation, which has frequently pro-

duced the desired effect, ought never to be entrusted to an unskilful person. The tooth-ach often proceeds from affections or debility of the stomach; a source which may be ascertained by the symptoms of indigestion, such as loss of appetite, nausea, vomiting, and head-ach, with this peculiar circumstance, that the pain generally returns at regular periods. In such case, relief can only be expected from a proper use of emetics, and mild aperients, succeeded by a judicious course of the Peruvian bark, and similar tonics.

Another source of these affections, is an irregular disposition, or arrangement, especially of the front-teeth, and mostly in the second set. It may proceed either from some of the first set having been suffered to remain in the jaw after the second has appeared, from a want of space in the jaw-bone, or from mal-conformation. In these cases, the only effectual remedy is that of extracting such of the teeth as, by their situation, obstruct their neighbours, and sometimes occasion considerable distress.

If the teeth should be loosened by external violence, they may again be fixed, by pressing them firmly into the sockets, and preserving them in that situation either by a silk or other ligature attached to the adjoining tooth: the patient, however, ought to subsist entirely on spoon-meat, or other soft and liquid food, till the desired effect be attained. But, where this separation arises from a sponginess or weakness in the gums, mild astringents, such as a solution of alum and sugar, tincture of bark, catechu, &c. will serve to consolidate the surrounding parts.

For *cleansing* and *preserving* the teeth, burnt bread, or bark, applied by the small finger, or on a piece of calico, will be found a safe and useful dentifrice.

### PULMONARY CONSUMPTION.

Pulmonary Consumption is a wasting of the lungs, attended with fever, cough, and expectoration of matter: it is one of the most fatal disorders to which

mankind is subject, and therefore requires our most serious attention; as it frequently originates from the most trivial causes.

Persons who possess what is termed a *natural disposition* for this malady, generally have a flat, compressed, or otherwise deformed chest; a long thin neck; the shoulders sharp-pointed; the teeth are uncommonly white, and not subject to decay. Two periods in life are said to be particularly obnoxious to phthisis; namely, the first from the eighteenth to the twenty-fifth, and the second between the thirty-third and thirty-eighth year. It has farther been observed, that men are more liable to it than females, and that it occurs less frequently in the West Indies than in Europe.

The following are the principal symptoms which indicate this malady: after a previous complaint in the chest, pains are felt under the breast-bone; shivering, succeeded by heat; the voice becomes shrill; a cough ensues, that gradually increases, particularly on lying down, so as to interrupt the rest; the patient finds himself most at ease on the diseased side. The expectoration at first generally resembles mucus, but afterwards becomes frothy matter streaked with blood; the pulse is rather feverish. Such is the *first, or inflammatory stage*.

If these symptoms are not timely relieved, they become extremely aggravated; the expectorated matter assumes a yellow, green, and brown colour, and is particularly offensive in the morning; the cough and pains increase; the symptoms of hectic fever appear regularly twice a day; the palms of the hands burn after taking meals; the cheeks are of a glowing red; the body and strength decline. Such are the characteristic signs of the *second, or suppurative period*.

In the *third, or last stage*, all these symptoms are more violent; the bones project in every part of the body; the temples appear hollow; the face presents a very unhealthy appearance; the eyes sink deep within their sockets; the nose becomes pointed; the hair falls off; and the nails curve inwardly. Night-

sweats, particularly about the head and chest, together with debilitating offensive loosenesses, now make their appearance. The hands and feet swell; the speech is progressively weakened, till death closes the scene, in most cases, with a gentle fainting. One circumstance is remarkable, that the unhappy sufferer, even at the summit of the disease, always flatters himself with hopes of recovery.

*Causes* :—Whatever may affect the organs of respiration, in such a manner as to produce inflammation, for instance, arsenical and other noxious fumes; the injudicious treatment of catarrhs, and other complaints of the chest; the improper use of astringents, &c.; after blood-spitting, foreign substances fall into the windpipe (whence stone-masons, miners, hair-dressers, and grinders, are frequent victims to this fatal disease); suppression of habitual evacuations; inordinate passions; sudden change from heat to cold. It has often been questioned, whether consumption be hereditary or contagious; but a superficial observation of the ravages in certain families would soon resolve any doubt on these points.

The danger attending pulmonary consumption is such as to leave little or no hope of recovering after the *second* stage has once commenced: where it proceeds from an hereditary disposition, it proves incurable. If it originate from suppressed evacuations of blood, or the repulsion of cutaneous eruptions, we may, by a judicious treatment, still flatter ourselves with a favourable issue. The duration of the disease varies according to the difference of constitution, cause and treatment, so that it may extend to twelve months, and even two or three years.

The *Cure* must be adapted to the cause, stage of the disease, and difference of the season; but the following may be admitted as *general* rules: All irritants and astringents (such as acids, &c.) ought to be avoided, and emollient medicines administered; the diet must be chiefly, and during the fever entirely, of the vegetable kind, light and nourishing. The utmost temperance is necessary, not to stimulate the blood,

and thus increase the hectic fever. Blisters applied to the back and sides, and other topical applications for deriving the fluids, are highly beneficial in the first stage, but less so in the sequel. All irritating remedies are to be avoided in the inflammatory stage, such as bark, the heating gums, &c.; on the contrary, recourse should be had to gentle evacuations, particularly by small doses of ipecacuanha, so as to produce long-continued nausea. If the inflammation subside, some gentle solvents, such as sal-ammoniac, the Iceland Liverwort, with sea air and a voyage, will be found eminently serviceable; though the latter cannot be supposed to act otherwise than an emetic: it ought, however, to be performed in the warm season. Gentle pedestrian exercise is preferable to that on horseback, the latter requiring too great an exertion; but, in cases of extreme weakness, a carriage will be preferable. Should these modes of exercise be found inadmissible, recourse may be had to *swinging*, with benefit to the patient. It is likewise necessary that the atmosphere be mild and pure; hence physicians have been induced to adopt a variety of expedients to answer this purpose. Dr. Bergius, in Sweden, and his followers in France and Britain, recommend a residence in a *cow-house*, which has uniformly relieved the patient, particularly during the cold seasons. The inhalation of factitious airs, which of late years has acquired some celebrity, can prove of advantage only in the first and second stages.

From a retrospect of the whole, it is evident that we can flatter ourselves but with small hopes of recovery, after this melancholy disease is once confirmed in the constitution: and how futile are all the various specifics, and other remedies, the bane and disgrace to mankind! The principal point will consequently always remain, to avoid all those causes that may affect the lungs.

## ON QUINSY.

The Quinsy, or Sore-Throat, is an inflammation of the internal parts of the mouth, throat, and wind-pipe, attended with fever.

As this frequent affection is divided into several species, each of which requires a particular treatment, it will be necessary to state the symptoms by which they may be distinguished from each other.

The first is the *common sore-throat*, where the glands, or tonsils, situated at the posterior part of the mouth, appear swollen, red, and painful; the deglutition and respiration are difficult; it occurs in the spring and autumn, when the air is moist, and chiefly attacks the middle-aged, and those of plethoric habits. The event is generally favourable, either by resolution, or supuration.

The second is an *inflammation of the throat*, at the posterior part of which a redness, though no swelling, is discernible; the pain is more violent than in the former; deglutition more difficult; respiration is, however, easier, but accompanied with cough and hoarseness. It likewise terminates in a few days, and in general without danger.

The third, or *malignant sore-throat*, affects the tonsils and throat with swelling, redness, and mucous crusts of a whitish or ash-colour, which cover the ulcers: it is attended with a putrid fever, the greater or less violence of which determines the degree of apprehension for the life of the patient. This malady originates in a contagion of the air, similar to the small-pox, and other epidemic diseases.

The fourth is an *inflammation of the windpipe*, when the breathing is difficult; the inspirations are loud; the voice is hoarse with a cough, but scarcely any visible swelling in the throat; deglutition easy; and the fever is extremely violent. This disorder frequently attacks children, from the time of weaning to the twelfth year of their age, with this peculiar circumstance, that the inside of the windpipe is lined

with a substance which is apt to obstruct the passage of the air, and thus often proves fatal by sudden suffocation, unless timely relief be procured. A favourable issue, however, may be expected, if an expectoration of a yellow matter, streaked with blood, or even a swelling on the side of the neck appear; which last symptom indicates, that the disease will terminate externally.

The two first species require a cooling diet, and diluent drink; such as barley-water with currant-jelly, linseed-tea with honey, &c. A large blister applied to the chest, or between the shoulders, and gargles of sage-tea, honey, and vinegar, aided by bathing the feet in warm water, will generally be sufficient to procure relief. But, if the swelling continue to increase, leeches should be applied to the outside of the neck; and recourse must be had to other means, in order to promote a suppuration: this may be effected by fumigating the throat through a funnel placed over a vessel of hot-water, into which should be thrown some camphor reduced to a coarse powder. After the disease is removed, care should be taken to avoid a relapse, by keeping the neck warm; though too anxious measures, and cravats too heating, would doubtless lead to the opposite extreme.

The cure of the *ulcerated sore-throat*, depending chiefly on the nature of the fever with which it is attended, requires the aid of a professional man: we shall, therefore, here only point out the regimen to be observed during its course. The diet ought to consist of sago, tapioca, panada with a proper quantity of wine, ripe sub-acid fruit, such as prunes, currants, raspberry-jelly, &c. Negus, perry, cyder, &c. may be allowed for drink; but the patient should always previously use the gargle above directed. His posture in bed ought to be such that the discharge from the mouth may be facilitated, and the greatest attention must be paid to clean linen and pure air.

In the fourth species of quinsy, blood-letting is the principal remedy: hence, from three to six leeches should be immediately applied to each side of the

neck, and a blister to the front; at the same time administering a brisk emetic, to dislodge the membrane which is forming; and, by the removal of which, the inflammation often speedily disappears.—In this complaint, the patient should be suffered to sleep as little as possible; for no circumstance has a stronger tendency to aggravate the disease. At all events, medical advice ought not to be neglected.

### ON THE GOUT.

The Gout is a disease of the Proteus-kind, thus defined by Dr. Cullen: It is hereditary, and commences without any apparent external cause, but is in most instances preceded by indigestion, or other affection of the stomach; its paroxysms are ushered in with fever, pain at the joint, generally, of the great toe, always attacking the joints, and chiefly those of the feet or hands: it returns at intervals, often alternates with indispositions of the stomach, or other external parts.

*Forerunners of the Gout*:—Indigestion often returning; thick sediment in the urine, sometimes for a whole year previously to the paroxysm, while that fluid emits the flavour of milk; vomiting, hiccough, and frequent pains of the forehead.

*Peculiarities of the disease*:—Chalky excrescences appear on the joints, which shortly before death also cover the face; the gout infects dogs licking the sore or tumefied parts of their master, and, according to some authors, it may likewise be communicated by clothes: it occurs most frequently in the spring; is often connected with the stone or gravel; and has sometimes been confounded with acute rheumatism.

*Causes*:—Acid food, especially sour cherries; the immoderate use of fish, sugar, wine, cyder, and spirituous liquors; in short, luxury and debauch of every kind; suppressions of diarrhœas, dysenteries, or the hemorrhoidal flux; repulsion of the itch, scurvy, or other cutaneous eruptions; sleeping on fresh hay, &c.



*Prevention and Cure*.:—Although this obstinate disease has generally been considered as incurable, and thus become too often the boon of the most ignorant pretenders, yet we believe that the want of success in the profession must be ascribed partly to that fashionable superficial treatment which constantly aims at alleviating urgent symptoms, and partly to the difficulty of prevailing on those whimsical patients to pursue a steady and regular course of both medicine and diet, without which no radical cure of the gout can reasonably be expected.

During a paroxysm of the gout, the patient ought to be treated according to the state of his *fever*; and, as the crisis of the disease generally takes place in three or four weeks, either by transpiration of the pores, or the discharge of urine, those secretions should be promoted by the mildest sudorifics and diuretics. Hence diluent drinks, such as barley-water in which sal ammoniac has been dissolved, in the proportion of one dram to each pint, should be liberally drunk; but, where impurities in the first passages are suspected, gentle emetics may be administered; and if fulness of blood prevail in the vessels, venesection will perhaps be advisable. Marino, an Italian physician, prescribed for his gouty patients half a pound of olive oil to be swallowed several times a day, with uncommon success; but we apprehend, that few persons will be inclined, or able, to take such profuse draughts. Meanwhile, the parts affected should be carefully covered with flannel; and though we do not approve of anodynes to be taken internally, because the crisis of this malady cannot be accomplished by Nature without painful efforts, yet the following applications have occasionally been found of great service in abating the most excruciating pain, viz. oil of wormwood; or Peruvian balsam dissolved in alcohol; or a solution of sal ammoniac, in white wine; or a cataplasm made of elder flowers, boiled in cream, and applied as hot as the patient can bear it; or oil of wax dropped on the part affected; or the skin of an eel; or liniments consisting of vinegar and soap; or

the leaves of the Rough Bindweed; or even fresh horse dung, &c. all have, in particular cases, been employed, and found productive of good effects.—Nevertheless, we by no means recommend these remedies to be indiscriminately or promiscuously used, as the propriety and safety of their application should be determined by professional advice.

When the gout retreats to more dangerous internal parts, such as the breast and stomach, it is generally attended with vomiting, which ought to be supported by small doses of ipecacuanha, about half a grain every ten minutes, while the parts affected are rubbed with vitriolic æther. As soon as the stomach is composed, small doses of camphor, or vitriolic æther, internally, will be of essential service to allay the spasmodic action of the viscera. At the same time, sinapisms should be applied to the soles of the feet, and the lower extremities kept warm; a treatment by which the pain, as well as the seat of the disease, easily returns to its former place.

Various expedients and plans of regimen have been devised, in order to prevent, or retard, the fits of the gout. As we cannot enter into the peculiarities of different constitutions, we shall briefly point out that mode of living which will, in general, be found the most conducive to the purpose.—Temperance, in the strictest sense, total abstinence from acid, fermented and spirituous liquors, and a very moderate use of wine, are the principal circumstances to be attended to by the gouty; but, in their food also, they should be extremely careful, and avoid all fat, rancid, salted, or smoked provisions of every description, especially *game* and *fish*. Spices, pickles, and stimulating dishes, in general, are the most powerful promoters of this painful disease; while hot suppers, late hours, and long sleeping in feather-beds, are its greatest nursery. Hence, persons liable to attacks of the gout, ought attentively to observe whatever agrees or disagrees with their digestive organs; for, as long as their stomach duly performs its office, there is reason to hope for a favourable change. Moderate exercise should

likewise, on no account, be neglected; because excessive fatigue and long-continued application to intense study, are equally detrimental. Fear, violent grief, and an irascible temper, ought to be vigilantly controlled by the calm reflections of reason. Beside all these precautions, however, it will be useful to adopt some particular rules of diet and regimen, in order to counteract the constitutional predisposition to that formidable disease. With this intention, we would recommend the constant use of *barley-bread*, and to bilious individuals *mare's milk*, or the whey obtained from it after coagulation. Large doses of ginger, from one to four or six drams pulverized, and boiled in cow's milk for breakfast, have lately been found an excellent preventive. Absorbent powders, consisting of two scruples of calcined magnesia, with purified kali and powdered rhubarb, from three to five grains of each, have likewise been taken with considerable advantage during the intervals of gouty fits; but this medicine ought to be repeated for several weeks, or even months, at least every other morning, according to the nature of the case.

Lastly, there is sufficient reason to conclude, that the internal use of the *marine acid*, or spirit of salt diluted with water, if continued for a proper length of time, and aided by bathing the legs daily in water saturated with a small proportion of the same acid, would greatly tend to prevent the return of the disease. Indeed, Dr. Wollaston has discovered, that gouty matter consists of a peculiar (*lithic*) acid which is supposed to be generated in the human body, and combined with the *mineral* alkali: consequently, as the marine acid has a greater attraction for this alkali than the lithic acid (or that which contributes to the formation of the stone in the bladder), it appears to be a reasonable inference, that the generation of chalky matter may be counteracted by the copious use of that acid, both internally and externally, which would preferably combine with the mineral alkali, and thus deprive the lithic acid of its nucleus or basis,

## ON RHEUMATISM.

Rheumatism is a painful disease, which principally affects the muscular parts and larger joints of the body, in the direction of the muscles, such as the shoulder, hip, knees, &c. If attended with fever, it is called the *acute* rheumatism; but, in the contrary case, the *chronic*: in the former, the pain generally shifts from one joint to another; in the latter, it remains in most cases fixed to a particular part. After the disorder has tortured the patient for some time, the joint is commonly swoln, red, and extremely painful to the touch.

As it is often difficult to distinguish *rheumatism* from *gout*, it should be remarked, that, in the former, the stomach is less affected; that the disease is more confined to the larger joints; that it occurs at an earlier stage of life; and that it is not hereditary. In young persons, the upper and internal parts *above* the midriff, but in the aged those *below* the diaphragm, are more frequently liable to be attacked. It is termed according to the seat of the malady: thus it is called *lumbago*, when seizing the loins; and *ischias*, or *sciatica*, when it rages in the hip. Rheumatisms prevail in cold climates, and mostly in spring and autumn; though they may appear at any season, in consequence of sudden alterations of heat and cold.

The inhabitants of this island suffering frequently and severely from rheumatic complaints, we shall briefly enumerate the leading causes from which they arise, namely: suppressed perspiration, by moist, cold air, especially at night; damp clothes; partial heat or cold; suppression of chronic diseases; inhalation of metallic vapours; violent passions; and often too, after recovering from other disorders, such as fevers, fluxes, &c. in which cases it is generally *chronic*.

The *acute* rheumatism, in most instances, terminates between the seventh and fourteenth day, by perspiration, or urinary secretion, the sediment of which is copious, and resembles brick-dust: the *chronic* some-

times produces a looseness or eruption, but always requires a critical perspiration to remove it completely. When it, however, changes its place from the external parts to any of the interior organs, where it lodges, the patient is always in danger.

*Cure* :—If the disease be attended with fever, every thing must be avoided that may tend to irritate the system, or increase the violence of the circulation. The acute rheumatism being an inflammatory affection, the advice of the profession becomes indispensable; in order to determine upon the propriety or necessity of blood-letting, and whether this operation is to be repeated: beside which, it requires total abstinence from animal food; fermented and spirituous liquors; the use of a mild vegetable, or milk-diet; together with copious draughts of bland, diluting beverage. To avoid the debilitating effects of too frequent venesection, in cases of excruciating pain, especially when attended with swelling and redness, recourse may be had to *leeches* applied to the part, or to *cupping*. The principal relief is next to be expected from gentle sudorifics, when the perspiration should be promoted by lukewarm drink. If the disorder be transferred from the external to internal parts, blisters must be applied to the spot, which was previously affected: all other local applications, except warmth, are in such cases improper. After the complaint is removed, the patient should avoid all sudden changes of temperature, and at the same time apply friction to the parts formerly diseased. During the whole affliction, it will be proper to preserve regularity of the bowels, by taking rhubarb, manna, flowers of sulphur, and similar laxatives, in small doses.

The chronic rheumatism is frequently consequent on the acute, when the latter has been mismanaged: hence it will be advisable to resort to such external and internal remedies, as may restore vigour to the parts, and promote the necessary evacuations, especially a proper state of perspiration. Gentle sudorifics, such as infusions of elder-flowers, white-wine whey, and ipecacuanha in small doses, have often pro-

cured relief; but the more active medicines, for instance, the oil of turpentine, guaicaum, and antimonials, must be cautiously prescribed.

As costiveness frequently retards the cure, it ought to be relieved by the mildest laxatives. The diet should, in general, be nourishing; and generous wine, moderately taken, will greatly conduce to recovery. The external means are, warmth by flannel worn next the painful part; frictions, vapour baths, electricity, exercise, and the volatile liniment; but the other oils and unctuous preparations must be avoided; as they are apt to check perspiration, and thus to protract the disorder. Lastly, blisters, and cataplasms of mustard, horse-radish, leaven applied to the suffering parts, or to their vicinity, have often proved beneficial.

### ON BLEEDING.

Bleeding is a term used to express either a spontaneous, or artificial, discharge of blood: in the former case, it is by medical writers called *hemorrhage*; in the latter, *venesection*, or blood-letting. We shall, in this article, only treat of some of those evacuations which Nature directs to take place in the system, and frequently for the benefit of the individual.

*Bleeding at the nose* generally arises in full sanguine habits, more commonly in young men than women, especially during adolescence. Exposure to the heat of the sun, a hot room, contusions of the head, or acrid substances introduced into the nostrils, are the general causes of this complaint. On its first attack, all cumbersome clothes and ligatures, especially those about the wrists and neck, ought to be instantly loosened; the patient should be removed to a cooler temperature, and placed in an erect posture; his hands and legs immersed in tepid water, about milk-warm; and dossils of lint dipped in vinegar, or a strong solution of white vitriol, put up the nostrils. If the bleeding does not abate, or threatens to become more profuse, cold fomentations, either of simple water, or

solutions of nitre and sugar of lead, should be repeatedly applied to the forehead and temples, as well as the region of the kidneys and genitals. One of the most effectual methods of stopping violent bleeding, consists in the unremitted administration of lukewarm, emollient clysters, in such small proportions as may be retained and absorbed by the bowels, while cold fomentations are applied to the abdomen. Meanwhile, the patient should drink lemonade, or water acidulated with a few drops of vitriolic acid, and sweetened with sugar; or if these cannot be had, a mixture of equal parts of vinegar and water may be substituted.

*Spitting of blood* may be owing to an abundance of that fluid, an organic debility of the lungs, or an imperfect structure of the chest. It may also proceed from exertions in blowing wind-instruments, loud-speaking, singing, running, wrestling, and excess in drinking, especially after violent exercise. This alarming complaint is attended with a dry cough, and difficulty of breathing: and if the evacuated blood be thin, frothy, and florid, it indicates a rupture of some pulmonary artery; but if it be thick, and of a darkish colour, while the coughing up is accompanied with pain, the disease is then occasioned by a fall, or other external injury. In either case, the diet should be cooling and diluent: hence sweet whey, a decoction of marsh-mallows, or barley, vegetables abounding in mucilage, the mildest laxatives, consisting of manna, tamarinds, phosphorated soda, vitriolated tartar, &c. ought to be instantly resorted to. At the same time, emollient clysters, bathing the legs in tepid water, and a suspension of all mental and bodily exertion, are absolutely necessary. Bleeding, cupping, styptic tinctures, fox-glove, and opium, must be submitted to the discretion of the medical practitioner: and we shall here only observe, that a table spoonful of fine salt, taken dry, has frequently afforded instant relief.

## ON BLISTERS.

Blister signifies either a thin bladder, containing a watery humour raised on the skin, or the application of vesicatories to different parts of the body. With this intention, Spanish flies are most commonly employed; though we are possessed of a great variety of indigenous plants, which might be effectually substituted. Hence we recommend the following:—

1. Mustard-seed mixed with vinegar sufficient to convert it into a thick paste, to be spread upon linen.
2. The fresh root of the horse-radish, grated, or in fine shavings.
3. The bruised leaves of the different species of the *Ranunculus*, or crow-foot.
4. The leaves of the *Polygonum hydropiper*, or water pepper, growing wild on the banks of rivulets.
- And, 5. The most powerful of all indigenous vegetables, the *Daphne Mezereum*, or spurge olive, every part of which is extremely acrid, but the rind is preferably used for blisters. Whether fresh, or dried, this rind should be previously steeped for a few hours in strong vinegar, and then a piece about one inch broad, and two or three inches long, tied over-night to the part: after it has sufficiently drawn, the blistered place is covered with an ivy leaf; and a similar vesicatory is applied contiguous to the former. In this manner, it is continued, according to particular circumstances, especially in chronic diseases, till the desired effect is attained. Where no time is to be lost, we advise the use of mustard-seed, as before described, with the addition of a little salt, which greatly increases its efficacy. These cataplasms are often more proper than the blisters prepared with Spanish flies; because the former operate more speedily, and act with less violence on the fluids than the latter. Hence they are of eminent service to promote critical eruptions; to prevent the small-pox from breaking out on the face, when applied at the commencement of the disease, either to the calves of the legs, or the soles of the feet; to mitigate the pain arising from internal inflammations, to drive catarrhal and rheumatic humors



from the more essential organs of life to the proximate external parts, and to rouse the indolent powers of Nature. In the most acute pains of the head, and the tooth-ach proceeding from a rheumatic cause, as well as in inflammatory affections of the eyes, such plasters may be usefully applied to the neck or the arm; in inflammations of the chest, to the breast and between the shoulders; in apoplectic fits, to the temples, &c.

In paralytic diseases, it is of the utmost consequence to place the blister in that direction which corresponds with the situation of the nerves in the part affected; and, in rheumatic disorders, such places should be preferred as contain nerves connected with the painful parts immediately under the skin. Thus, in the most acute lumbago, or sciatica, it would be of little use to blister the hip or thigh, where the nerves are situated deep in the muscles; but by applying a vesicatory to the sole of the foot on the same side, we may promise almost certain relief.

In all inflammatory, and especially in nervous affections, attended with a small feeble pulse, and where the powers of Nature are rapidly declining, the use of blisters is very extensive.

Their operation is in a great measure mechanical; as the first action is that of stimulating the vessels of the skin, inducing the blood to flow from the part most affected by inflammation to the surface; thus exhausting the principle of irritability, and collecting the serum, or watery part of the vital fluid, under the cuticle.

We shall farther observe, that in acute and dangerous diseases, where it is often necessary to repeat the application of blisters, the new one should never be delayed till the former is completely healed. But, with respect to the time they are to be left on the skin, much depends on the degree of irritability in the patient, as well as the relative strength of the plaster. Some constitutions, of an irritable fibre, experience its effects in less than half an hour, while in others it may remain four, six, or eight hours, without

raising the skin. In opening a blister, it is not necessary to cut away the epidermis, or scarf skin, and to cause unnecessary pain and irritation; as a single longitudinal incision is sufficient to give vent to the collected humor.

Blisters sometimes operate on the urinary canal, and produce a painful strangury, or difficulty of making urine: this effect may be remedied by the internal use of camphor, assisted by diluent and agglutinating emulsions, such as strong decoctions of barley, lintseed, solutions of gum arabic, &c.; and to prevent such accidents, the blister itself may be mixed with camphor. If, on the other hand, they will not draw, the skin ought to be previously rubbed with strong vinegar: or, if their action be too violent, a little of the extract of henbane may be added to the composition.

*Caution.* We think it our duty to warn the reader against the use of blisters in which the *Spanish fly* is the principal ingredient. In plethoric persons, or those of a full habit, they increase the circulation of the blood, and ought to be applied only after the necessary evacuations have been strictly attended to. In diseases of a putrid tendency, such as low fevers, and bilious diarrhœas, they are pernicious, because they stimulate and spread the contagion over the whole frame. Lastly, when the humors are obviously in a state of dissolution, which is evident from the sallow and lifeless complexions of cachectic persons, blisters are not unfrequently productive of incurable mortification. These fatal effects, however, seldom or never take place from the application of mustard-seed, or horse-radish.

## ON BRUISES.

Bruises, or contusions, being frequently neglected at first, may produce consequences more alarming than those of wounds. Blows received on the head, pit of the stomach, hip, or the knee, are the most dangerous. A violent inflammation, in consequence

of injured nerves, or the destruction of blood vessels, often occasions the mortification of those parts, which the most skilful treatment cannot retrieve, if the accident be neglected for many hours or days. Instead, therefore, of listening to officious old women, or neighbours, an experienced surgeon ought instantly to be consulted. We know a recent melancholy instance, of a most promising youth, who, when studying physic at Edinburgh, was so improvident as to suffer a slight contusion on the knee to pass unnoticed; which, however, proved fatal to him a week after the accident.

When the contusion is slight, fomentations with lukewarm vinegar and vinegar, repeatedly applied to the part, will generally relieve it; but if it be of a more serious nature, either decoctions of the German leopard's bane, or arquebusade water, may be preferably used.— Dr. Buchan informs us, that he has often seen cataplasms of fresh cow-dung applied to violent contusions occasioned by blows, falls, bruises, &c. and never knew them fail to have a good effect. In more violent cases of this nature, the patient's diet ought to consist of nourishing aliment, that is easily digested: carefully avoiding all salted meat, pickles, spices, fermented or spirituous liquors, and whatever tends to irritate and inflame the body.

## ON INDIGESTION.

Indigestion, or *Dyspepsia*, is a complaint which chiefly consists in the loss of appetite, and is generally attended with nausea, flatulence, vomiting, heartburn, costiveness, as well as other unpleasant symptoms, without any immediate affection either of the stomach or other parts.

Indigestion arises from a variety of causes, such as the eating of hard, unwholesome food, and unripe fruit; drinking too large draughts of liquor during, or immediately after dinner; the immoderate use of

opium, and of spirits ; taking too large quantities of tea, coffee, or any warm relaxing liquors ; tampering with emetics or laxatives ; the want of free air and exercise ; and in consequence of indulging in any of the depressing passions.

Persons of weak, delicate habits, particularly the sedentary and studious, are frequently subject to indigestion. A radical cure of it can be effected only by removing the debility of the stomach and whole system. With this intention, emetics, or gentle purgatives, should be previously administered, in order to clear the alimentary canal. Next, tonics, such as valerian, Peruvian bark, &c. may be resorted to with advantage ; and, if the complaint be accompanied with putrid eructations, or other signs of putrescency, it will be advisable to take the strongest *antiseptics*, especially the marine acid or spirit of salt, sufficiently diluted with water. Many, however, have been effectually cured by the *liberal* use of cold water alone. In great laxity of the stomach, considerable benefit has been derived from the use of the columbo root, in small and frequent doses.—The chalybeate waters are, to phlegmatic habits, in general, of great service ; and the moderate drinking of sea water has often been productive of good effects.

Medicines, however, will be of little or no advantage, unless the patient take moderate and daily exercise in the open air, and endeavour to preserve a cheerful contented mind. Early rising ought to form an indispensable part of his attention ; while his diet should consist principally of solid but tender aliment, which he, from experience, has found easy of digestion.

### ON AGUE.

Ague is a general term for those fevers which have periodical intermissions, and are *specifically* denominated *quotidian*, *tertian*, *quartan*, according to the various periods at which the febrile paroxysm returns.

Agues are, in some degree, endemial, or peculiar to certain situations. In the county of Kent, and the fens of Lincolnshire, they have become proverbial. They more frequently attack men than women, the young than the old, the poor than the rich : sufficient reasons may easily be assigned for this peculiarity. The habits and employments of the male sex, especially at the time of youth, subject them to causes which more particularly predispose them to that disease, such as cold moist air, wet feet, long exposure to rain, and wet clothes ; whereas females, and the aged of both sexes, keep more within doors.

From this statement it may readily be inferred, that persons who reside in certain districts of a country, are more frequently affected with these fevers, than those enjoying a purer atmosphere, and inhabiting a drier soil.

That the poor are more liable to agues than the rich, may in some measure be ascribed to the above-mentioned causes. The difference of their *diet*, and clothing, may also be supposed to possess an influence in admitting or resisting this disease.

The symptoms generally observed during the cold fit in agues, are, strong shiverings, succeeded by great heat, and the usual concomitants of fever, such as thirst, quick pulse, &c. The hot fit is terminated by a perspiration more or less profuse, according to the habit and constitution of the patient.

Several other symptoms occasionally present themselves in the different stages of the disease. The cold fit is often preceded by torpor, languor, lassitude, yawning, stretching attended with nausea, vomiting, and sometimes, in weak habits, with diarrhœa. The hot fit is ushered in with languor ; a flaccid state of the whole body, but especially of the limbs ; a general sense of soreness, as if the parts were bruised ; a quick pulsation of the arteries, sometimes attended with trobbings and pain in the head. The duration of the paroxysm, before it terminates in the sweating fit, is irregular in respect to time, seldom subsides in less

than six hours, and never exceeds twelve. The urine which the patient evacuates in the last stage, commonly deposits a reddish sediment. During the interval of each paroxysm, the patient apparently enjoys as good a state of health as previous to the attack of this disease. Nevertheless, if it be suffered to continue long, it weakens and exhausts the constitution, and occasions such ravages as medicine cannot easily repair; producing general debility, obstructions in the viscera, jaundice, dropsy, &c.

We shall proceed to point out a few of those remedies which have been found effectual in this disease.

A tea-spoonful of powdered snake-root mixed with a glass of brandy and water, and taken before the approach of the fit, keeping the body warm to induce perspiration, has been of considerable service. The following remedy is also said to have been successfully employed in agues:

Two spoonfuls of the juice of sage, mixed with an equal quantity of vinegar, and taken at the approach of the fit.

The regular method of eradicating an ague, after the disease has been properly ushered in, by a few successive paroxysms, consists in cleansing the first passages by proper laxatives and emetics, as occasion may require.

The patient, during the fit, should drink freely of water-gruel, and other warm diluents. The Peruvian bark may then be administered in any form best suited to the patient's stomach, either in decoction, infusion, tincture, or in powder mixed with Port wine. The last mode, as being the most efficacious, ought, when practicable, always to be preferred.

Dr. Lysons has observed, that his patients derived great benefit from the use of the snake-root combined with bark. His recipe is as follows: two scruples of bark and one of snake-root. He says, that two or three doses rarely fail to arrest the progress of a *distinct* tertian or quartan ague. Should a farther repetition of this remedy be requisite, it will be attended

with this advantage, that the disorder will be less likely to return, than if it were stopped by the bark alone.

Repeated shocks of the electrical fluid have been said to cure agues ; but this is a precarious and hazardous practice. Even that sovereign remedy, the bark, has sometimes been known to fail, and yet the patient has been cured by common *spiders*, three or four large ones mixed up with honey, their legs cut off, and the bodies only retained.

The folly of placing any dependence upon *charms*, and such occult modes of curing this disease, needs no other reprobation than to say, that they have been adopted by the ignorant multitude, and that they have more frequently failed, than succeeded, in vanquishing an obstinate intermittent.

Lastly, if no other means be found adequate to the inveteracy of this complaint, we cannot, in justice to Dr. Fowler, omit to mention his *mineral solution*, or ague-drops, so well known to all our apothecaries, that they require no farther description. Yet, convinced of their violent effects on the human system, we seriously recommend the use of the remedies above specified, before *arsenic* be employed as the ultimate resource.

## ON BURNS.

Burns may proceed from fire as well as a fluid body; which latter may be either heated, or consist of corrosive mineral acid, such as aqua fortis, oil of vitriol, &c. In this place, we shall treat only of burns occasioned by *fire*.

In slight cases, the burnt part may be held for a minute near the fire ; or, if it be a finger, the pain and inflammation will be abated by bringing it in contact with the ear ; which, in this instance, acts like a conductor. Ink, the juice of onions, or a little brandy, or even salt rubbed on the part affected, all tend to

prevent blisters ; but if these, nevertheless, should rise, open them with a lancet, or a fine pair of scissars, without cutting away the scarf-skin, let out the collected humour, and then apply a mixture of oil and lime-water, beat up with a new-laid egg, spread upon soft linen rags, and renewed every hour, or oftener.

One of the most simple remedies in *recent* burns, and which is in great vogue on the Continent, consists in the expressed juice of the burdock, or clot-burr ; the fresh and tender leaves of which possess healing virtues, and are therefore applied not only to burns, but also to wounds, ulcers, &c. There is a kind of green ointment kept in families for occasional use : it is composed of equal parts of the juice obtained from the middle leaves of the burdock, and oil of almonds, or olives, in the purest state. This composition is said to be of singular efficacy, also, in healing ulcers, allaying pain arising from piles, removing tetters, and suppurating pustules of the face, if assisted by internal remedies, adapted to particular cases.

### ON SURFEIT.

Surfeit is an indisposition attended with nausea, and the sensation of a load at the stomach, which are generally occasioned by indolence, and excess in eating or drinking ; though the disease sometimes arises from an error in the quality of the diet. During this affection, the insensible perspiration is impeded, and the skin is often covered with eruptions.

If a surfeit originate from the use of muscles, corrupted meat, or other unwholesome animal food, it will be advisable speedily to resort to an emetic ; and, after its operation, to drink frequent and copious draughts of vegetable acids, diluted with water. But, in cases where *excess* in eating or drinking is the immediate cause of the complaint, the first passages ought to be evacuated by proper purgatives, and afterwards such medicines administered as tend to restore the obstructed perspiration, and at the same time promote the secretion of urine.



## ON TEMPERANCE.

Temperance, strictly speaking, denotes the virtuous practice of those who restrain their sensual appetites; it is, however, generally used to express *moderation*, in which sense it is indiscriminately applied to all the passions.

Temperance has been justly termed the virtue which bridles the inordinate desires: it is, indeed, closely connected with prudence and justice. It silences calumny, and substitutes extenuation for slander; expels avarice from the bosom; and thus demonstrates, that true happiness consists not in contemplating useless wealth, or in the gratification of a vitiated palate, but in a contented mind. The votary of temperance views with equal disgust the sallies of unjust resentment, and those of riotous mirth: he beholds the melancholy consequence of *intemperance*; learns to extinguish revenge, and every desire which humiliates a rational agent; thus proving that such virtue is the parent of many others, while it is attended with peace, prosperity, health, and satisfaction.

Without expatiating on this topic, let it suffice to observe, that it is a duty incumbent on all parents, to rear their children with a strict regard to *temperance*; as, by adhering to this rule only, they are entitled to enjoy either *health* or *longevity*.

## ON DEATH.

The extreme difficulty of defining what state of the animal economy is absolutely indicative of death, has occasioned the repetition of many salutary warnings against too hasty burial.

Men, says Lord Bacon, fear death as children fear the dark; and as that natural fear in children is increased by frightful tales, so is the other. Groans, convulsions, weeping friends, and the like, show death

terrible ; yet there is no passion so weak but conquers the fear of it, and therefore death is not such a terrible enemy : revenge triumphs over death ; love slights it ; dread of shame prefers it ; grief flies to it ; and fear anticipates it.

That the frightful tales of death to which this philosopher alludes, do inconceivable mischief among mankind, is a truth which is open to daily observation : yet the sex most liable to impressions on the spirits, are spending their hours in the perusal of the most loathsome descriptions of mortality. Novels are full of graves and charnel-houses ; and, indeed, in every department of literature, language is made to wanton in the most horrible terms of which the subject is susceptible : the divine talks of the king of terrors ; and the poet seizes every word, applicable, or not applicable, that can offend the feelings. The author of *William and Margaret* brings a ghost *fester-ing in its shroud*. In common life, no words can express the barbarity of the expressions indulged in. To remedy an evil so general, so common to all descriptions of people, and in no little degree upheld by authority, were a task too great to attempt by any puny means ; all that can be done is to counteract the ideas thus impressed by awakening others : yet nature herself will justify the voice that ventures to call every exhibition of death and its consequences on the body wrong. The feelings revolt ; and they revolt because they are abused. Nature presents life, beauty, vigour ; and withdraws all that are the reverse of these. Has nature bade us dig up graves, or amuse ourselves in slaughter-houses ? Nature, with a kindness worthy of her works, has done every thing to lighten the impression of the idea of death ; and man does every thing to stamp it deep. The evil being committed, however, it is of little general import to inquire with what propriety it was done ; all that remains, is to fortify ourselves against it.

The alarms most prevalent among mankind, seem to arise from two considerations : 1. The supposed

corporeal suffering attending it; and, II. The state that is to succeed it.

I. With respect to the supposed corporeal suffering, we should observe, 1. That death is a mere passive extinction of the vital fire, unattended with any exertion of the animal functions, and therefore wholly free from pain. The agonies, so much talked of, and the sufferings incident to sickness or wounds, are the agonies and sufferings of life, not of death; they are the struggles of the body to live, not to die; efforts of the machine to overcome the obstacles by which its functions are impeded. 2. It has often been suggested, and always with truth, that by-standers are much deceived by the appearance of pain in those who suffer it. Only a degree commensurate to the strength of the body can ever be endured;—this boundary passed, the victim, in the moment, swoons, and is relieved: or, by the continuance of an endurable pain, the sensibility of the nerves is destroyed. 3. We all suffer much more in parts of our lives than we can at the time of death. Severe torture may be experienced before death; but the period is that which precedes the dying state. 4. Death itself is either an instantaneous stoppage of life, or a gradual, languid, insensible fainting. In the case of drowning, for instance, much is said to be suffered; yet the pain is in the efforts of the body to live, not in its attempts to die, nor in struggles of the soul to separate, as some persons, however strangely, seem to imagine.

II. Of the state that follows death, what is here to be said refers entirely to the body, or rather to a corporeal view of the subject; for it is not to be supposed that those who think of it with horror, doubt either the immortality of their souls, or the goodness of their Creator. They say that they shudder at the thought of being buried in the earth; they shudder that their bodies should become subject to the laws by which matter is decomposed. These are thoughts on which it is the sickness of thinking to dwell. Life justly revolts from a condition so uncongenial with itself:

but is it not absurd to perplex ourselves concerning personal evils that can never arrive while we have the power of feeling them? Death is the end of life. It occupies no part of our existence. It is not an act that we are called upon to do. It cannot be an evil. A happy life is, indeed, desirable; for life *is*, but death *is not*. To talk of death, is to give a name to nothing. To part with life, is to part with that of which we can never regret the loss.

The death of those with whom we are acquainted, rationally afflict us; not that we weep for them, but for ourselves. The affections are wounded. We feel a vacuum in our hearts. Persons sometimes die under circumstances peculiarly lamentable; yet even here, our sorrow is the result of sentiment, rather than of judgment. There may be other causes for regretting the death of our friends; but these are our own, not theirs.

To millions, who have missed, or been pushed out of, the path of enjoyment, death is the most desirable of events; and why is it that in the personifications of this idea, every object is laid hold of to frighten "us poor fools of nature," rather than represent it to us in the figure of a mild and benevolent being, upon whose lap the head of the weary reposes?

Among the finest views that have been given of this, the following, by Dr. Franklin, deserves, perhaps, to be ranked:—"WE are SPIRITS:—that bodies should be lent us while they can afford us pleasure, assist us in acquiring knowledge, or doing good to our fellow-creatures, is a kind and benevolent act of God; when they become unfit for these purposes, and afford us pain instead of pleasure, instead of an aid, become an incumbrance, and answer none of the intentions for which they are given, it is then equally kind and benevolent that a way is provided by which we may get rid of them: Death is that way."

## PART III.

CONTAINING

USEFUL ARTS, DOMESTIC ECONOMY, &amp;c. &amp;c.

*To bronze Plaster Figures.*

LAY the figure over with isinglass size till it holds out, or without any part of its surface becoming dry or spotted; then, with a brush, such as is termed by painters a sash tool, go over the whole, observing carefully to remove any of the size (while it is yet soft) that may lodge on the delicate or sharp places, and set it aside to dry; when it has become so, take a little very thin oil gold-size, and, with as much of it as just damps the brush, go over the figure, allowing no more of this size to remain than what causes it to shine. Set it apart in a dry place, free from smoke; and after it has remained there forty-eight hours, the figure is prepared for bronzing.

The bronze, which is almost an impalpable powder (and may be had at the colour shops, of all metallic colours) should be dabbed on with a little cotton wool; after having touched over the whole figure, let it stand another day; then, with a soft dry brush, rub off all the loose powder, and the figure will resemble the metal it is intended to represent, and possess the quality of resisting the weather.

*To preserve the natural Colour in Petals of dried Flowers.*

Nothing more is necessary than to immerse the petals for some minutes in alcohol. The colours will fade at first; but in a short time they will resume their natural tint, and remain permanently fixed.

*Art of gilding Iron or Steel.*

Dissolve, in aqua regia, with the assistance of a little heat, as much gold as will fully saturate it; then, adding cream of tartar, form it into a paste. Any bright piece of steel or iron, such as the blade of a knife or razor, &c. being first wetted with water, or saliva, and then rubbed with this paste, will be instantly gilded in a beautiful manner: after which, it is to be washed with cold water. If a thicker coat of gold be desired, gold leaf may be laid on, and burnished hard, when it will adhere to the first gilding; and, if the nature of the thing gilded will admit of heat, by warming it, but not so as to become red-hot, and then burnishing it, any thickness of gilding may be easily added.

*Method of Dry Gilding.*

Dry Gilding, as it is called by some workmen, is a light method of gilding, by steeping linen rags in a solution of gold, then burning them; and with a piece of cloth dipped in salt water, rubbing the ashes over silver intended to be gilt. This method requires neither much labour, nor much gold, and maybe employed with advantage for carved work and ornaments. It is not, however, durable.

*Composition for gilding Brass or Silver.*

Take two ounces of gum-lac, two ounces of karabe, or yellow amber, forty grains of dragon's blood in tears, half a drachm of saffron, and forty ounces of good spirits of wine: infuse and digest the whole in the usual manner, and afterwards strain it through a linen cloth; when the varnish is used, the piece of silver or brass must be heated before it is applied: by this means it will assume a gold colour, which is cleaned, when soiled, with a little warm water.

*To clean Gold and restore its Lustre.*

Dissolve a little sal-ammoniac in urine; boil your soiled gold therein, and it will become clean and brilliant.

*To silver Glass Globes.*

Take two ounces of quicksilver, one ounce of bismuth, of tin and lead half an ounce of each: first put the tin and lead in fusion, then put in the bismuth, and when you perceive all in fusion, let it stand till almost cold, and then pour in the quicksilver.

After this take the glass globe, which must be very clean, and the inside free from dust, make a paper funnel, which put in the hole of the globe, as near the glass as you can, so that the amalgam, when you pour it in, may not splash and spot the glass: pour it in softly, and move it about that the amalgam may touch every where; if you find it begin to be curdly, hold it over a gentle heat, and it will flow again: the cleaner and finer your globe is, the looking-glass will be the better.

*To cut Glass.*

Take a red-hot shank of a tobacco-pipe, lay it on the edge of your glass, which will then begin to crack, then draw the shank end a little gently before, and it will follow any way you draw your hand.

*Composition that will effectually prevent Iron, Steel, &c. from rusting.*

This method consists in mixing, with fat oil varnish, four-fifths of well rectified spirit of turpentine. The varnish is to be applied by means of a sponge; and articles varnished in this manner will retain their metallic brilliancy, and never contract any spots of rust. It may be applied to copper, and to the preservation of philosophical instruments; which, by being brought into contact with water, are liable to lose their splendour, and become tarnished.

*To prevent Steel or Iron from Rust.*

Take one pound of hog's lard free from salt, one ounce of camphire, two drachms of black lead powder, and two drachms of dragon's blood in fine powder; melt the same on a slow fire until it is dissolved, and let it cool for use.

*To prevent polished Hardware and Cutlery from taking rust.*

Case-knives, snuffers, watch-chains, and other small articles made of steel, may be preserved from rust, by being carefully wiped after use, and then wrapped in coarse brown paper, the virtue of which is such, that all hardware goods from Sheffield, Birmingham, &c. are always wrapped in the same.

*To clear Iron from Rust.*

Pound some glass to fine powder, and having nailed some strong linen or woollen cloth upon a board, lay upon it a strong coat of gum-water, and sift thereon some of your powdered glass, and let it dry; repeat this operation three times, and when the last covering of powdered glass is dry, you may easily rub off the rust from iron utensils, with the cloth thus prepared.

*Simple way of determining the exact Time of Noon, and to obtain a Meridian Line, on a small Scale.*

Near the top of a room, facing the south, fix a plate of metal, with a circular hole in it, for the sun to shine through, from eight or nine o'clock in the morning until three or four in the afternoon; then, by means of a line and a plummet, determine the point upon the floor, which is directly under the centre of the hole, and from that point, as a centre, draw several concentric semicircles. Having made choice of some clear day near the summer solstice, make the room nearly dark, and about three or four hours before, and after noon, mark the points where the northern, as also the southern limb of the sun's image cross those semicircles, and there will be several curves included between these points, through the middle of which a right line being drawn from the centre of the semicircles, is a meridian line. After the line has been drawn in this manner, it must be examined by succeeding observations, and corrected, if necessary, by which means a line may be drawn exceedingly near the true meridian.



*Practical Observations on the above.*

1. The metal plate, which may be about one-fifth of an inch thick, must be placed parallel to the axis of the world, that the sun's rays may pass perpendicularly through it when he is in the equator.

2. The aperture need not be more than one-fifth of an inch in diameter, if it be counter-sunk on both sides, to admit the sun's rays to flow through it at the distance of three or four hours before, and after noon.

3. If the surface of the floor, on which the observations are to be taken for finding the meridian, be not sufficiently even, the floor may be covered with new boards, taking the greatest care that they are laid down perfectly horizontal from east to west. After the line has been correctly drawn, and the north and south ends of it marked upon the walls of the room, the boards may be taken away, and others laid down to draw the lines upon.

A meridian line upon a small scale, but sufficiently correct for regulating clocks and watches, may be had by the following method:

Let a stone, with an even surface, about three feet long and two broad, be fixed horizontally upon a brick or stone pillar, at a convenient height for observation, with one of its ends facing the south. Near the middle of this end of the stone fix a gnomon in a direction perpendicular to the horizon. This gnomon, which should be made of a strong bar of metal, must have a small aperture through it, for the sun's ray to flow through early in the morning and late in the evening. From that point, as a centre, which is directly under this aperture, draw several concentric semicircles, and fix the meridian line according to the preceding directions. The gnomon should have several other holes made through it in a line perpendicular to the horizon, that the sun's rays, at noon, flowing through some of them, may fall near the north end of the stone at all seasons of the year; for, if only one hole be used, the sun's image will fall near the centre of the gnomon in the summer, and in the winter it will be thrown far beyond the north end of the stone.

*For taking Grease out of the Leaves of Books.*

Fold up, in two small bags made of fine open muslin, some ashes of burnt bones, finely powdered, or of calcined hartshorn, which is always ready prepared at the shops of the druggists; lay the bags of muslin, containing the powder, one on each side of the greasy leaf: and having heated a pair of fire tongs, or hair-dresser's pinching tongs, of a moderate warmth, press with them the two bags, against the greasy spot, and hold them some time in that situation. Repeat the process, if necessary.

When the irons cannot be conveniently used, the powder may be heated over the fire, in a clean earthen vessel; and, whilst hot, applied, without any muslins, on each side of the greasy spot, and a weight laid on it to assist its effect.

*Method of cleaning dirty Prints or Books.*

If the print should be pasted upon canvas, put it into a copper or kettle of water just boiling; and in three or four minutes it will easily separate from the canvass; next expose it to the sun, by placing it on a grass plat, and, to prevent the wind from having any effect upon it, so as to tear it, or blow it away, fix four skewers into the ground near the corners, and tie a string to each of the skewers, crossed from corner to corner, so as to confine it completely; when it becomes dry, wet it again thoroughly; and so on for several days, if necessary, in the same manner as you bleach linen; in which operation, as well as in bleaching prints, a hot sun is best. If the foulness of the print should settle in spots, soak those spots well by putting wet linen rags doubled upon them for a considerable time. If soaking in this manner does not get the spots out, put the print into hot water, gently boiling, or very near it, and let it continue for twenty-four hours; but if the paper be spongy, or very thin, it will not bear soaking so long. Soaking in this manner is seldom necessary. The foulness from flies may be gently brushed off with a wet sponge, when the

*print* is thoroughly soaked. Spirit of sea-salt, much diluted, will get white-wash off *prints*: take care not to hold your nose over the vapour of the spirit. Do not leave your *prints* on the grass-plot at night, for fear of the worms.

*To make strong, or Bqok-Binder's Paste.*

Mix wheaten flour, first in cold water, then boil it till it be of a glutinous consistence; this method makes common paste. When you wish it to be of a stronger nature, mix a *fourth, fifth, or sixth* of the weight of the flour of powdered alum: and where it is wanted of a still more tenacious quality, add a little powdered rosin.

*Blood Cement for repairing Copper Boilers, &c. &c.*

This cement is often used by coppersmiths, to lay over the rivets and edges of the sheets of copper, in large boilers, to serve as an additional security to the joinings, and to secure cocks, &c. from leaking; it is made by mixing pounded quick-lime with ox's blood. It must be applied fresh made, as it soon gets so hard as to be unfit for use.

If the properties of this cement were duly investigated, it would be found useful for many purposes to which it has never been yet applied. It is extremely cheap, and very durable.

*Excellent Cement for broken China,*

May be made from a mixture of equal parts of glue, white of egg, and white lead.

*Cement to mend broken China or Glass.*

Garlic stamp in a stone mortar; the juice whereof, when applied to the pieces to be joined together, is the finest and strongest cement for that purpose, and will leave little or no mark if done with care.

*To prepare a Cement for joining broken Glass, China, Earthenware, &c.*

Take two ounces of good glue, and steep it for a

night in distilled vinegar; boil them together the next day; and having beaten a clove of garlic, with half an ounce of ox-gall, into a soft pulp, strain the juice through a linen cloth, using pressure, and add the same to the glue and the vinegar. Then take gum sandarach powdered, and turpentine, of each one drachm, and of sarcocol and mastic powdered, each half a drachm, and put them into a bottle, with an ounce of highly rectified spirits of wine. Stop the bottle, and let the mixture stand for three hours in a gentle heat, frequently shaking it. Mix this tincture also with the glue while hot, and stir them well together with a stick or tobacco pipe, till part of the moisture be evaporated; then take the composition from the fire, and it will be fit for use. When this cement is to be applied, it must be dipt in vinegar, and then melted in a proper vessel, with a gentle heat; and if stones are to be cemented, it is proper to mix with it a little powdered tripoli or chalk; or if glass is to be conjoined, powdered glass should be substituted.

For the uniting the parts of broken china, or earthenware vessels, as also glass, where the rendering the joint visible is not of consequence, the following composition, which is much more easily prepared, may be substituted for the foregoing.

Take an ounce of Suffolk cheese, or any other kind devoid of fat, grate it as small as possible, and put it, with an equal weight of quicklime, into three ounces of skimmed milk; mix them thoroughly together, and use the composition immediately.

Where the broken vessels are for service only, and the appearance is not to be regarded, the joints may be made equally strong with any other part of the glass, by putting a slip of thin paper, or linen, smeared with this cement, over them, after they are well joined together by it. This method will make a great saving in the case of glasses employed for chemical, or other similar operations.

A cement of the same nature may be made by tempering quicklime with the curd of milk, till it be of a due consistence for use. The curd, in this case, should

be as free as possible from the cream or oil of the milk. On this account it should be made of milk from which the cream has been well skimmed off, or the kind of curd commonly sold in the markets, made of whey, and the milk from which butter has been extracted, commonly called butter-milk. This cement should be used in the same manner as the preceding, and they may be applied to stones, marble, &c. with equal advantage as the compound one above given, and are much more easy and cheaply prepared.

Drying oil, with white lead, is also frequently used for cementing china and earthenware; but where it is not necessary the vessels should endure heat or moisture, isinglass glue, with a little tripoli or chalk, is better.

*To stop Cracks in Glass Vessels.*

The cracks of glass vessels may be mended, by daubing them, with a suitable piece of linen, over with white of egg, strewing both over with finely powdered quicklime, and instantly applying the linen closely and evenly.

*Receipt for Blacking.*

In three pints of small beer, put two ounces of ivory black, and one pennyworth of brown sugar. As soon as they boil, put a desert-spoonful of sweet oil, and then boil slowly till reduced to a quart. Stir it up with a stick every time it is used; and put it on the shoe with a brush when wanted.

*Blacking Balls for Shoes.*

Mutton suet, four ounces; bees'-wax, one ounce; sugar-candy, and gum-arabic, one drachm each, in fine powder; melt these well together over a gentle fire, and add thereto about a spoonful of turpentine, and ivory and lamp black sufficient to give it a good black: while hot enough to run, you may make it into a ball, by pouring the liquor into a tin mould; or let it stand till almost cold, you may mould it in what form you please by the hand.

*A celebrated Blacking Cake for Boots and Shoes.*

Take one part of gum tragacanth, four parts of river water, two parts of neat's-foot, or some other softening, lubricating oil, two parts of superfine ivory black, one part of Prussian blue in fine powder, or indigo, four parts of brown sugar-candy; boil the mixture; and when the composition is of a proper consistence, let it be formed into cakes of such a size that each cake may make a pint of liquid blacking.

*Easy Method of cleaning Boots and Shoes in the Winter-time, so as to prevent soiling the Person, the Clothes, or the House.*

When the boots or shoes are covered with dirt, take them off, and with the back of a case-knife, or a piece of wood cut thin at the edges like a stationer's paper-knife, scrape the dirt off with the same as clean as possible, which will be very easily done whilst the boots and shoes are wet. Then, with a small piece of wet sponge or flannel, wipe off the remaining dirt which the pressure of the knife cannot effect. Then place them in a dry room, or at a convenient distance from the fire, for a few hours, and they will take the blacking remarkably well, and bear as fine a polish as they did before wetting. If proper attention is paid to this process, the fingers will scarcely be soiled, and much trouble will be saved by the extra brushing required when the dirt is suffered to dry on.

*Genuine Preparation of the Famous Chemical Liquid for Boot Tops, &c.*

Many of the liquids, sold under various denominations, for the purpose of cleaning and restoring the colour of boot tops, &c. are found very imperfectly to answer that purpose, and often to injure the leather. The following genuine receipt may be fully relied on, for actually producing this desirable effect; as well as for readily taking out grease, ink spots, and the stains occasioned by the juice of fruit, red port wine, &c. from all leather or parchment.—Mix in a phial, one

drachm of oxymuriate of potash with two ounces of distilled water; and, when the salt is dissolved, add two ounces of muriatic acid. Then, shaking well together, in another phial, three ounces of rectified spirit of wine with half an ounce of the essential oil of lemon, unite the contents of the two phials, and keep the chemical liquid thus prepared closely corked for use. The chemical liquid should be applied with a clean sponge, and dried in a gentle heat; after which, the boot tops may be polished with a proper brush, so as to appear like new leather.

*To prevent Shoes from taking in Water.*

One pint of drying oil, two ounces of yellow wax, two ounces of turpentine, and half an ounce of Burgundy pitch, melted carefully over a slow fire. If new boots or shoes are rubbed with this mixture, either in the sunshine, or at some distance from the fire, with a sponge or soft brush, and the operation is repeated as often as they become dry, till the leather is fully saturated, they will be impervious to wet, and will wear much longer, as well as acquiring a softness and pliability that will prevent the leather from ever shrivelling.

*Note.*—Shoes or boots prepared as above ought not to be worn till perfectly dry and elastic, otherwise their durability would rather be prevented than increased.

*To prevent Gentlemen's Hats from being spotted after a Shower of Rain.*

If your hat is wet from rain, or any other cause, shake it out as much as possible; then with a clean linen cloth or handkerchief wipe the hat very carefully as well as you can, observing, that in so doing you keep the beaver flat and smooth, in the same direction as it was first placed, then with your hands fix it in the original shape, and hang it at a distance from the fire to dry. A few hours after, or the next morning, lay the hat on the table, and brush it round and round several times with a soft brush in the proper di-

rection, and you will find your hat not in the least injured by the rain.

If the gloss is not quite so high as you wish, take a flat iron, moderately heated, and pass the same two or three times gently over the hat; brush it afterwards, and it will be nearly as handsome as when first sent home from the shop.

*Preventives against the Ravages of the Moth.*

The most usual preventives against the injury occasioned by the moth are cedar-wood and tobacco leaves. A piece of the former put into a box, if sufficiently large to emit its peculiar odour to whatever may be contained in it, will effectually preserve the cloth from injury; and it is well known, that in libraries where there are books bound with Russia leather, which is tanned with cedar, no moth or worm will corrupt. It is common to put cedar shavings and chips into boxes, &c. which answer just as well as the wood itself.

Tobacco leaves may be placed at certain intervals in the folds of a piece of woollen cloth; and it is sufficient to examine them once in six months, in order to renew the leaves if necessary.

*New Method of cleaning Silks, Woollens, and Cottons.*

The following receipt is recommended as a good method of cleaning silk, woollen, and cotton goods, without damage to the texture or colour of the same:

Grate raw potatoes to a fine pulp in clean water, and pass the liquid matter through a coarse sieve into another vessel of water; let the mixture stand still till the fine white particles of the potatoes are precipitated: then pour the mucilaginous liquor from the fecula, and preserve the liquor for use. The article to be cleaned should then be laid upon a linen cloth on a table, and having provided a clean sponge, dip the sponge into the potatoe liquor, and apply it to the article to be cleaned, till the dirt is perfectly separated; then wash it in clean water several times. Two middle-sized potatoes will be sufficient for a pint of water. The white fecula will answer the purpose of tapioca,



and make an useful nourishing food, with soup or milk, or serve to make starch and hair-powder. The coarse pulp, which does not pass the sieve, is of great use in cleaning worsted curtains, tapestry, carpets, or other coarse goods. The mucilaginous liquor will clean all sorts of silk, cotton, or woollen goods, without hurting or spoiling the colour; it may be also used in cleaning oil paintings, or furniture, that is soiled. Dirtied painted wainscots may be cleansed by wetting a sponge in the liquor; then dipping it in a little fine clean sand, and afterwards rubbing the wainscot with it.

*Permanent Ink for marking Linen.*

Take of lunar caustic, (now called *argentum nitratum*) one drachm; weak solution, or tincture of galls two drachms. The cloth must be first wetted with the following liquid, viz. salt of tartar, one ounce; water, one ounce and an half; and must be perfectly dry before any attempt is made to write upon it.

*To perfume Linen.*

Rose leaves dried in the shade, cloves beat to a powder, and mace scraped; mix them together, and put the composition into little bags.

*To raise the Surface or Pile of Velvet when pressed down.*

Warm a smoothing-iron moderately, and cover it with a wet cloth, and hold it under the velvet; the vapour arising from the heated cloth will raise the pile of the velvet, with the assistance of a rush whisk.

*To prevent Danger from Wet Clothes.*

Keep if possible in motion, and take care not to go near a fire or into any very warm place, so as to occasion a sudden heat, till some time after you have been able to procure dry clothes.

*Useful Hints relative to Bedclothes, Mattresses,  
Cushions, &c.*

The purity of feathers and wool employed for mattresses and cushions ought to be considered as a first object of salubrity. Animal emanations may, under many circumstances, be prejudicial to the health; but the danger is still greater, when the wool is impregnated with sweat, and the excrementitious parts of persons who have experienced putrid and contagious diseases. Bedclothes, and the wool of mattresses, therefore, cannot be too often beat, carded, cleaned, and washed. This is a caution which cannot be too often recommended.

It would be very easy in most situations, and very effectual, to fumigate them with muriatic gas.

*To clean Silk Stockings.*

Wash your stockings first in white soap liquor, lukewarm, to take out the rough dirt; then rinse them in fair water, and work them well in a fresh soap liquor. Then make a third soap liquor, pretty strong, in which put a little stone blue, wrapped in a flannel bag, till your liquor is blue enough; then wash your stockings well therein, and take them out and wring them. Then let them be dried so that they may remain a little moist; then stove them with brimstone, after which, put upon the wood leg two stockings, one upon the other, observing that the two fronts, or outsides, are face to face, then polish them with a glass.

N. B.—The two first soap liquors must be only lukewarm, the third soap liquor as hot as you can bear your hand in it.

Blonds and gauzes are whitened in the same manner, only a little gum is put in the soap liquor before they are stoved.

*To purify infectious Air in a Room.*

Fumigate the apartment with muriatic acid gas, or with a little oxymuriatic gas. Care must be taken not to inhale the oxymuriate, as it is poison.

*Easy Method of preserving Animal Food sweet for several Days in the Height of Summer.*

Veal, mutton, beef, or venison, may be kept for nine or ten days perfectly sweet and good, in the heat of summer, by lightly covering the same with bran, and hanging it in a high and windy room; therefore, a cupboard full of small holes, or a wire safe, so as the wind may have a passage through, is recommended to be placed in such a room, to keep away the flies.

*To preserve Game in hot Weather.*

Game or poultry may be preserved for a long time, by tying a string tight round the neck, so as to exclude the air, and by putting a piece of charcoal into the vent.

*To sweeten Meat, Fish, &c. that is tainted.*

When meat, fish, &c. from intense heat, or long keeping, are likely to pass into a state of corruption, a simple and pure mode of keeping them sound and healthful is, by putting a few pieces of charcoal, each the size of an egg, into the pot or saucepan, wherein the fish or flesh are to be boiled. Among others, an experiment of this kind was tried upon a turbot, which appeared too far gone to be eatable: the cook, as advised, put three or four pieces of charcoal, each the size of an egg, under the strainer, in the fish kettle; after boiling the proper time, the turbot came to table perfectly sweet and firm.

*To purify fly-blown Meat.*

It has been successfully proved, by many experiments, that meat entirely fly-blown has been sufficiently purified to make good broth, and had not a disagreeable taste, by being previously put into a vessel containing a certain quantity of beer. The liquor will become tainted, and have a putrid smell.

*Hints on warming Beds.*

In taking the coals into the warming-pan, remove

therefrom any black coals in a burning state, and scatter upon those in the pan a little common salt; this will correct the unhealthy sulphureous vapour of the coals, and prevent their suffocating smell.

*Beef Tea.*

Take lean beef, a pound, cut it in thin slices, put it into a quart of water, boil it a quarter of an hour; then take out the meat, mince it small, and boil it a quarter of an hour more, skimming it well.

*Chinese Method of mending China.*

Take a piece of flint-glass, beat it to a fine powder, and grind it well with the white of an egg, and it joins china without riveting, so that no art can break it in the same place. You are to observe, that the composition is to be ground extremely fine on a painter's stone.

*Excellent Substitute for Table Beer.*

As small beer is apt to become sour in warm weather, a pleasant beer may be made, by adding to a bottle of porter ten quarts of water, and a pound of brown sugar or molasses. After they have been well mixed, pour the liquor into bottles, and place them, loosely corked, in a cool cellar. In two or three days it will be fit for use. A spoonful of ginger, added to the mixture, renders it more lively and agreeable to the taste. This might be adopted in the navy instead of grog.

*To make good Spruce Beer.*

This cheap and wholesome liquor is thus made: take of water sixteen gallons, and boil the half of it; put the water thus boiled, while in full heat, to the reserved cold part, which should be previously put into a barrel or other vessel; then add 16 pounds of treacle or molasses, with a few table-spoonfuls of the essence of spruce, stirring the whole well together; add half a pint of yeast, and keep it in a temperate situation, with the bung-hole open, for two days, till the ferment-

tation be abated; then close it up, or bottle it off, and it will be fit to drink in a few days afterwards. In North America, and perhaps in other countries, where the black and white spruce firs abound, instead of adding the essence of the spruce at the same time with the molasses, they make a decoction of the leaves and small branches of these trees, and find the liquor equally good.

It is a powerful antiscorbutic, and may prove very useful in a long sea voyage.

*To discover if Bread is adulterated with Alum.*

Make a solution of lime in aquafortis, and put a little of this solution into water, in which you have steeped the bread suspected to contain alum. If such should be the case, the acid, which was combined with the alum, will form a precipitate or chalky concretion at the bottom of the vessel.

*Method for taking the Rankness and disagreeable Taste from Irish Salt Butter.*

The quantity proposed to be made use of, either for toasts or melting, must be put into a bowl filled with boiling water, and when the butter is melted, skim it quite off; by this method it is so separated from any gross particles, that it may require a small addition of salt, which may be put into the cold water that is made use of in melting butter for sauce; and though the butter is oiled by hot water, it becomes a fine cream in the boiling for sauce.

*To remove the Taste of Turnips from Milk or Butter.*

The taste of the turnip is easily taken off milk and butter, by dissolving a little nitre in spring water, which being kept in a bottle, and a small teacupful put into eight gallons of milk, when warm from the cow, entirely removes any taste or flavour of the turnip.

*To make Salt Butter fresh.*

Put four pounds of salt butter, into a churn, with

four quarts of new milk, and a small portion of arnotto. Churn them together, and, in about an hour, take out the butter, and treat it exactly as fresh butter, by washing it in water, and adding the customary quantity of salt.

This is a singular experiment. The butter gains about three ounces in each pound, and is in every particular equal to fresh butter. It would be greatly improved by the addition of two or three ounces of fine sugar, in powder. A common earthen churn answers the same purpose as a wooden one, and may be purchased at any pot shop.

*To prevent Children from eating their Food too quickly.*

Children, when very young, get into the habit of eating their food too quickly, particularly fruit, and other substances of which they are fond. To prevent their acquiring this habit, amusing devices might be employed, as cutting an apple, a pear, a piece of cake, or any other article of the same sort, into a number of pieces, arranging them in lines like an army, with one as an officer in the centre, and telling them that the whole army must be devoured, *piece by piece*, and in a regular manner! This interests little children so much, that they soon prefer it to a more speedy mode of consumption.

*Cheap and valuable Substitute for Coffee.*

The flour of rye, and English yellow potatoes, are found an excellent substitute for coffee. These ingredients are first boiled, then made into a cake, which is to be dried in an oven, and afterwards reduced to a powder, which will make a beverage very similar to coffee in its taste, as well as in other properties, and not in the least detrimental to health.

*Excellent Substitute for Coffee.*

The seeds of the flower de luce, or common yellow water-flag, being roasted in the same manner as coffee, very much resemble it in colour and flavour, but have something more of a saccharine odour, approaching to

that of extract of liquorice. When carefully prepared, they possess much more of the aroma of coffee, than is to be found in any of the leguminous and gramineous seeds that have been treated in the same manner. Coffee made of these seeds is extremely wholesome and nutritious, in the proportion of half an ounce, or an ounce, to a pint of boiling water.

*Best Method of cleaning fine Black-tin Dish Covers, Patent Pewter, &c.*

Where the polish is gone off, let the articles be first rubbed over the outside with a little sweet oil, on a piece of soft linen cloth; then clear it off with dry pure whitening, quite free from sand, on linen cloths, which will make them look as well as when new. The insides should be rubbed with rags moistened in wet whitening, but without a drop of oil. Always wiping these articles dry, when brought from table, and keeping them free from steam or other damp, greatly facilitates the trouble of cleaning them.

*Cleaning Floor Cloths.*

After sweeping and cleaning the floor cloths with a broom and damp flannel, in the usual manner, wet them over with milk, and rub them till beautifully bright, with a dry cloth. They will thus look as well as if they were rubbed first with a waxed flannel, and afterward with a dry one; without being so slippery, or so soon clogging with dust or dirt.

*To clean Gold and Silver Lace.*

Sew the lace in linen cloth, and boil it in a pint of water, and two ounces of soap; and then wash the lace in water.

*To restore the Lustre of Glasses' tarnished by Age or Accident.*

Strew on them powdered fuller's-earth, carefully cleared from sand, &c. and rub them carefully with a linen cloth. Oxide of tin (putty) would perhaps be better.

*To clean Flint-glass Bottles, Decanters, &c. &c.*

Roll up, in small pieces, some whited-brown or blotting-paper; then wet and soap the same; put them into the vessel, with a little luke-warm water; shake them well for a few minutes; then rinse the glass with clean water, and it will be as bright and clear as when new from the shops.

*To clean Mahogany Furniture.*

Three pennyworth of alkanet root, one pint of cold drawn linseed oil, two pennyworth of rose pink; put these into a pan, and let them stand all night: then take some of this mixture, rub it over the tables or chairs, and let it remain one hour; then take a linen cloth and rub it well off, and it will leave a beautiful gloss on the furniture.

If the pinky shade occasioned by the alkanet root and pink is disagreeable, they may be omitted in part or entirely.

*To clean Turkey Carpets.*

To revive the colour of a Turkey carpet, beat it well with a stick till the dust is all got out; then, with a lemon or sorrel juice, take out the spots of ink, if the carpet be stained with any; wash it in cold water, and afterwards shake out all the water from the threads of the carpet. When it is thoroughly dry, rub it all over with the crumb of a hot wheaten loaf; and, if the weather is very fine, hang it out in the open air a night or two.

*To clean Marble.*

Take a bullock's gall, a gill of soap less, half a gill of turpentine, and make it into a paste with pipe clay; then apply it to the marble, and let it dry a day or two; then rub it off; and, if not clean, apply it a second or third time until it is clean.

*Mixture for cleaning Stone Stairs, Hall Pavements, &c.*

Boil together half a pint each of size and stone blue water, with two table-spoonfuls of whitening, and two



cakes of pipemaker's clay, in about two quarts of water. Wash the stones over with a flannel slightly wetted in this mixture; and when dry, rub them with flannel and a brush. Some persons recommend beer, but water is much better for the purpose.

*Varnish for Furniture.*

To one part of virgin's white wax add eight parts of oil of petroleum; lay a slight coat of this mixture on the wood with a badger's brush, while a little warm; the oil will then evaporate, and leave a thin coat of wax, which should afterwards be polished with a coarse woollen cloth.

*German Furniture Gloss, or Polishing Wax for Mahogany, &c.*

Cut in small pieces a quarter of a pound of yellow wax; and, melting it in a pipkin, add an ounce of well pounded colophony, or black rosin. The wax and colophony being both melted, pour in, by degrees, quite warm, two ounces of oil or spirit of turpentine. When the whole is thoroughly mixed, pour it into a tin or earthen pot, and keep it covered for use. The method of applying it to the furniture, which must be first well dusted and cleaned, is by spreading a little of this composition on a piece of woollen cloth, and well rubbing the wood with it; and, in a few days, the gloss will be as firm and fast as varnish.

*Method of cleaning and polishing Rusty Steel.*

After well oiling the rusty parts of the steel, let it remain two or three days in that state; then wipe it dry with clean rags, and polish with emery or pumice-stone, on hard wood. Frequently, however, a little unslaked lime, finely powdered, will be sufficient after the oil is cleaned off. Where a very high degree of polish is requisite, it will be most effectually obtained by using a paste composed of finely levigated blood-stone and spirits of wine. Bright bars, however, are admirably cleaned, in a few minutes, by using a small portion of fine corned emery, and afterwards finishing

with flour of emery or rotten-stone: all of which may be had at any ironmonger's. This last very simple method, will, perhaps, render any other superfluous.

*Easy Method of cleaning Paper Hangings.*

Cut into eight half quarters, a quartern loaf two days old; it must neither be newer nor staler. With one of these pieces, after having blown off all the dust from the paper to be cleaned by means of a good pair of bellows, begin at the top of the room; holding the crust in the hand, and wiping lightly downwards with the crumb, about half a yard at each stroke, till the upper part of the hangings is completely cleaned all round. Then go again round, with the like sweeping stroke downward, always commencing each successive course a little higher than the upper stroke had extended, till the bottom be finished. This operation, if carefully performed, will frequently make very old paper look almost equal to new. Great caution must be used not by any means to rub the paper hard, nor to attempt cleaning it the cross or horizontal way. The dirty part of the bread, too, must be each time cut away, and the pieces renewed as soon as at all necessary.

*For cleaning Steel or Iron-polished Stoves.*

Stoves may be admirably cleaned, in a few minutes, by using a small portion of fine corned emery-stone; and afterwards finishing with flour of emery or rotten-stone, either of which may be obtained at any ironmonger's.

*To clear Iron from Rust.*

Pound some glass to fine powder; and having nailed some strong linen or woollen cloth upon a board, lay upon it a strong coat of gum-water, and sift thereon some of your powdered glass, and let it dry; repeat this operation three times, and when the last covering of powdered glass is dry, you may easily rub off the rust from iron utensils, with the cloth thus prepared.

*To take the Smell of Paint from Rooms.*

Let three or four broad tubs, each containing about eight gallons of water, and one ounce of vitriolic acid, be placed in a new painted room, near the wainscot; this water will absorb and retain the effluvia from the paint in three days, but the water should be renewed each day during that time.

*To prevent Inconvenience from Perspiration of the Hands.*

Ladies who work lace or embroidery sometimes suffer inconvenience from the perspiration on their hands; which may be remedied, by rubbing the hands frequently with a little dry wheaten bran.

*To take Mildew out of Linen.*

Take soap, and rub it well; then scrape some fine chalk, and rub that also in the linen; lay it on the grass; as it dries wet it a little, and it will come out at twice doing.

*To Purify Water for domestic and other Purposes.*

This method is extremely simple, and consists in placing horizontally, in the midst of a common water butt, a false bottom, perforated with a great number of small holes. The butt being thus divided into two equal parts, the upper is filled with pieces of charcoal, which must be neither too large nor too small, thoroughly burned, light, and well washed. Immediately under the cock, by which the water enters the butt, must be placed a small hollow cylinder, being merely to break the force of the water, and prevent it from falling upon the charcoal with such violence as to detach from it any particles of dirt, and wash them through into the lower receptacle; it is of little consequence of what material it is made. M. Siauve thinks, that this contrivance might be made subservient to the interests of agriculture as well as domestic economy; and that it would be highly advantageous to provide water thus filtered for the cattle, during the

whole of the dog-days, and particularly when the ponds and streams are infected by the rotting of hemp and flax.

*Remark.*—A very good filtre may be made of charcoal, but it is comparatively expensive; and there is a patent for the only way in which the filtre can be made to last. In the above receipt, if the charcoal is not in very fine powder, it will have little effect in purifying the water; if it be, the charcoal will very soon choke from the quantity of mud deposited in it by the water, and the frequent renewals of the charcoal, which would be necessary from the choking, would be found expensive. The contrivance could only be useful as a temporary means of ascertaining the power of the charcoal on the particular kind of water, with a view afterwards to procure a proper filtre.

*To purify Water for Drinking.*

Filtre river water through a sponge, more or less compressed, instead of stone or sand, by which the water is not only rendered more clear, but wholesome; for sand is insensibly dissolved by the water, so that in four or five years it will have lost a fifth part of its weight. Powder of charcoal should be added to the sponge when the water is foul, or fetid. Those who examine the large quantity of terrene matter on the inside of tea-kettles, will be convinced all water should be boiled before drunk, if they wish to avoid being afflicted with gravel and stone, &c. &c.

*To purify the muddy Water of Rivers or Pits.*

Make a number of holes in the bottom of a deep tub; lay some clean gravel thereon, and above this some clean sand; sink this tub in the river or pit, so that only a few inches of the tub will be above the surface of the water; the river or pit water will filter through the sand, and rise clear through it to the level of the water on the outside, and will be pure and limpid.

*Method of making putrid Water sweet in a Night's Time.*

Four large spoonfuls of unslacked lime put into a puncheon of ninety gallons of putrid water, at sea, will, in one night, make it as clear and sweet as the best spring water just drawn: but unless the water is afterwards ventilated sufficiently to carbonize the lime, it will be a lime water. Three ounces of pure unslacked lime should saturate ninety gallons of water.

*Easy Method of purifying Water.*

Take a common garden pot, in the midst of which place a piece of wicker work; on this spread a layer of charcoal of four or five inches in thickness, and above the charcoal a quantity of sand. The surface of the sand is to be covered with paper pierced full of holes, to prevent the water from making channels in it. This filter is to be renewed occasionally. By this process, which is at once simple and economical, every person is enabled to procure pure limpid water at a very trifling expense.

*To purify River or any other Muddy Water.*

Dissolve half an ounce of alum in a pint of warm water, and stirring it about in a puncheon of water just taken from any river, all the impurities will soon settle to the bottom, and in a day or two it will become as clear as the finest spring water.

*Warm Water.*

Warm water is preferable to cold water, as a drink, for persons who are subject to dyspeptic and bilious complaints, and it may be taken more freely than cold water, and consequently answers better as a diluent for carrying off bile, and removing obstructions in the urinary secretion in cases of stone and gravel. When water, of a temperature equal to that of the human body, is used for drink, it proves considerably stimulant, and is particularly suited to dyspeptic, bilious, gouty, and chlorotic subjects.

*Proper Method of making Toast and Water, and the Advantages resulting therefrom.*

Take a slice of fine and stale loaf-bread, cut very thin, (as thin as toast is ever cut) and let it be carefully toasted on both sides, until it be *completely browned all over*, but nowise blackened or burned in any way. Put this into a common deep stone or china jug, and pour over it, from the tea-kettle, as much clean boiling water as you wish to make into drink. Much depends on the water being actually in a boiling state. Cover the jug with a saucer or plate, and let the drink cool until it be quite cold; it is then fit to be used: the fresher it is made the better, and of course the more agreeable. The above will be found a pleasant, light, and highly diuretic drink. It is peculiarly grateful to the stomach, and excellent for carrying off the effects of any excess in drinking. It is also a most excellent drink at meals, and may be used in the summer time, if more agreeable to the drinker.

*To keep Oranges and Lemons.*

Take small sand and make it very dry; after it is cold put a quantity of it into a clean vessel; then take your oranges, and set a laying of them in the same, the stalk-end downwards, so that they do not touch each other, and strew in some of the sand, as much as will cover them two inches deep; then set your vessel in a cold place, and you will find your fruit in high preservation at the end of several months.

*New Method of preserving Potatoes.*

The following method of preserving potatoes was communicated by Mr. Millington, to the Society for Bettering the Condition of the Poor:

I caused (says this gentleman) three pounds and a half of potatoes to be peeled and rasped; then put in a coarse cloth, between two boards, in a napkin press, and pressed them into a dry cake, hardly so thick as a thin cheese. They were then placed on a shelf to

dry. There was about a quart of juice expressed from the potatoes. To this was added about a like quantity of water, and in about an hour it deposited more than sixty grains of white starch or flour, fit to make pastry. A cake of this was prepared and sent to the Society. In bulk it occupied only a sixth of the compass of the potatoes: in weight it had lost about two-thirds by the process; but the cake, when dressed with steam or otherwise, will produce nearly the same quantity of food as three pounds and a half of potatoes, properly dressed for table, would do. Some potatoes, quite frozen, have been prepared this way, and the cake was perfectly sweet: whereas some of the same parcel that were left, and not pressed, were rotten and spoiled in a few days.

*To preserve Potatoes from the Frost.*

If you have not a convenient store-place for them, dig a trench three or four feet deep, into which they are to be laid as they are taken up, and then covered with the earth taken out of the trench, raised up in the middle like the roof of a house, and covered with straw, to carry off the rain. They will be thus preserved from the frost, and can be taken up as they are wanted.

*Method of recovering Frost-bitten Fruits and Vegetables.*

This may be done by putting such fruits and roots, as pears, apples, potatoes, &c. as have been penetrated by frost, into cold water, when a thaw approaches, and letting them remain in the water some time, till by the plumpness and fairness of the fruit and roots, it appears that the particles of the frost are extracted. This method has been often tried and found to answer, but at the same time the utmost care should be taken to preserve these things from the frost, as it is better to keep off an enemy than to be at the trouble of driving him out.

*To preserve Apples.*

Dry a glazed jar perfectly well, put a few pebbles in

the bottom; fill the jar with apples, and cover it with a bit of wood made to fit exactly; and over that, put a little fresh mortar. The pebbles attract the damp of the apples. The mortar draws the air from the jar, and leaves the apples free from its pressure, which, together with the principle of putrefaction which the air contains, are the causes of decay. Apples, kept thus, have been found quite sound, fair, and juicy, in July.

*A Method of preserving Fruit fresh all the Year.*

Take of saltpetre one pound, of bole-armenic two pounds, of common sand, well freed from its earthy parts, four pounds, and mix all together. After this, let the fruit be gathered with the hand before it be thorough ripe, each fruit being handled only by the stalk; lay them regularly, and in order, in a large wide-mouthed glass vessel; then cover the top of the glass with an oiled paper, and carrying it into a dry place, set it in a box filled all round, to about four inches thickness, with the aforesaid preparations, so that no part of the glass vessel shall appear, being in a manner buried in the prepared nitre; and at the end of a year such fruits may be taken out, as beautiful as when they were first put in.

*Composition to take off Casts of Medals.*

Melt eight ounces of sulphur over a gentle fire, and with it mix a small quantity of fine vermilion; stir it well together, and it will dissolve like oil; then cast it into the mould, which is first to be rubbed over with oil. When cool, the figure may be taken, and touched over with aqua-fortis, and it will look like fine coral.

*To make excellent Punch.*

One tea-spoonful of Coxwell's acid salt of lemons, a quarter of a pound of sugar, a quart of water nearly boiling, half a pint of rum, and a quarter of a pint of brandy; a little lemon peel may be added, or in place thereof, a few drops of essence of lemon.



*To make the celebrated Eastern Beverage, called Sherbet.*

This liquor is a species of negus without the wine. It consists of water, lemon or orange juice, and sugar, in which are dissolved perfumed cakes, made of the best Damascus fruit, and containing also an infusion of some drops of rose-water: another kind is made of violets, honey, juice of raisins, &c. It is well calculated for assuaging thirst, as the acidity is agreeably blended with sweetness. It resembles, indeed, those fruits which we find so grateful when one is thirsty.

*Currant Wine.*

Gather your currants on a fine dry day, when the fruit is full ripe, steep them, put them in a large pan, and bruise them with a wooden pestle; let them stand in a pan or tub twenty-four hours to ferment, then run it through a hair seive, and do not let your hand touch the liquor; to every gallon of this liquor put two pounds and a half of white sugar, stir it well together, and put it into your vessel. To every six gallons put in a quart of brandy, and let it stand six weeks: if it is fine, bottle it; if it is not, draw it off as clear as you can into another vessel, or large bottles, and in a fortnight bottle it into smaller bottles.

*Elder Wine.*

Pick the elder berries when full ripe; put them into a stone jar, and set them in the oven, or a kettle of boiling water, till the jar is hot through; then take them out and strain them through a coarse cloth, wringing the berries, and put the juices into a clean kettle; to every quart of juice put a pound of fine Lisbon sugar: let it boil, and skim it well; when it is clear and fine pour it into a jar; when cold cover it close, and keep it till you make raisin wine; and to every gallon of wine put half a pint of elder syrup.

*Grape Wine.*

To every gallon of ripe grapes put a gallon of soft water, bruise the grapes, let them stand a week with-

out stirring, and draw the liquor off fine; to every gallon of wine put three pounds of lump sugar; put it into a vessel, but do not stop it till it has done hissing, then stop it close, and in six months it will be fit to bottle.

A better wine, though smaller in quantity, will be made by leaving out the water, and diminishing the quantity of sugar. Water is only necessary where the juice is so scanty or so thick, as in cowslip, balm, or black currant wine, that it could not be used without it. Very good wine, after keeping for twelve months, has been made by adding a proper quantity of sugar to grapes, which were so hard that it was necessary to burst them over the fire to get out the juice.

#### *An excellent Family Wine*

May be made of equal parts of red, white, and black currants, ripe cherries, and raspberries, well bruised, and mixed with soft water, in the proportion of four pounds of fruit to one gallon of water. When strained and pressed, three pounds of moist sugar are to be added to each gallon of liquid. After standing open three days, during which it is to be stirred frequently, and scummed as it may require, it is to be put into a barrel, and left for a fortnight to work, when a ninth part of brandy is to be added, and the whole bunged down: and in two or three years it will be rich and valuable.

#### *Excellent Bitter for the Stomach.*

One ounce of gentian root sliced, one ounce of fresh rind of lemon, two drachms of cardamom seeds bruised, three drachms of Seville orange peel; pour a pint and a half of boiling water over the ingredients, let it stand an hour, then decant the clear liquor, and take a wine glass full two or three times a day.

It should be kept closely covered after the water is put in the ingredients.

#### *To make British Herb Tea.*

Take of hawthorn leaves, dried, two parts, sage and

balm one part; mix these well together, and they will make an excellent and pleasant sanative tea, particularly wholesome to nervous people.

*British Substitute for Foreign Tea.*

Betony, if gathered when just going to flower, has the taste of tea, and all the good qualities of it, without the bad ones, and, moreover, it cures inveterate head-aches.

*The Virtues of Sage.*

This valuable herb was held in such high esteem among the ancients, that they have left us a Latin verse, which signifies,

*“ Why should a man die whilst he has sage in his garden ? ”*

It is reckoned admirable as a cordial, and to sweeten and cleanse the blood. It is good in nervous cases, and is given in fevers, with a view to promote perspiration. With the addition of a little lemon juice, it is very grateful and cooling; some choose to take it dry, alleging that the surface of the leaves of green sage abound with animalcules, which are very visible through a microscope, and so there are in many articles of common food; but we may be assured, even if this is the case, that as they are nourished with the sage, they are of no harm, and, at all events, a little hot water will destroy them.

*Economy in Fuel.*

A saving of nearly one-third of the coal consumed in London may be made by the following easy means:—let the coal ashes, which are usually thrown into the dust bin, be preserved in a corner of the coal hole, and make your servants add to them from your coal heap, an equal part of the small coal or slack, which is too small to be retained in the grate, and pour a small quantity of water upon the mixture. When you make up your fire, place a few round coals in front, and throw some of this mixture behind; it saves the

trouble of sifting your ashes, gives a warm and pleasant fire, and a very small part only will remain unburnt.

*Economy in Tinder.*

The very high price of paper, at present, renders the saving of even the smallest quantity of linen or cotton rags of consequence, as they sell very dear; trifling as it may be thought, yet it will be found that a considerable quantity of rags may be saved in a family, by using as tinder for lighting matches, the contents of the common snuffers collected in the course of the evening.

*Plate Powder.*

In most of the articles sold as plate powders, under a variety of names, there is an injurious mixture of quicksilver, which is said sometimes so far to penetrate and render silver brittle, that it will even break with a fall. Whitening, properly purified from sand, applied wet, and rubbed till dry, is one of the easiest, safest, and certainly the cheapest, of all plate powders; jewelers and silversmiths, for small articles, seldom use any thing else. If, however, the plate be boiled a little in water, with an ounce of calcined hartshorn in powder to about three pints of water; then drained over the vessel in which it was boiled, and afterwards dried by the fire, while some soft linen rags are boiled in the liquid till they have wholly imbibed it, these rags will when dry, not only assist to clean the plate, which must afterwards be rubbed bright with leather, but also serve admirably for cleaning brass locks, finger plates, &c.

*Economy in Candles.*

In such candlesticks as are not made to slide, the candles are frequently permitted to burn in the socket to great waste, and to the injury of the candlestick; this may be prevented by taking out early the short piece of candle, placing it betwixt three common pins

stuck in an old cork, and putting the cork in the candlestick.

Or rather give a penny for that ingenious utensil, a save-all. It is at least as cheap, and prevents the risk of setting fire to the house.

*To prevent the disagreeable Smell arising from House Drains.*

As the diffusion of this noxious matter, within our dwellings, tends to produce disease and mortality, it cannot be too generally known that a cheap and simple apparatus has been contrived for carrying off the waste water, &c. of sinks, and which at the same time prevents the possibility of any air ever returning back into the house from thence, or from any drain which may be connected with it. It is known by the name of a *stink trap*, and may be had at any of the ironmongers.

*Composition for Shaving, without the Use of Razor, Soap, or Water.*

Mix one pint and a half of clear lime water, two ounces of gum-arabic, half an ounce of isinglass, an eighth of an ounce of cochineal, a quarter of an ounce of turmeric-root (made into powder), an eighth of an ounce of salt of tartar, and an eighth of an ounce of cream of tartar, together: boil them for one hour at least (stirring up the mixture during the whole time of boiling, and be careful not to let it boil over), clear it through a sieve; then add two pounds and a half of pumice-stone, finely pulverized; mix the whole together, with the hands, into one cake, by the assistance of the white of two eggs, well stirred up. Then divide the cake, so made, into twelve smaller cakes; dry them in the open air for three days; put them into an oven of moderate heat, for twenty-four hours, when they will be completely dry and fit for use. Apply them, with a gentle friction, to the beard, and they will produce the complete effect of shaving, by rubbing off the hair.

*Necessary Hints to those who use Copper Vessels for culinary Purposes.*

In domestic economy, the necessity of keeping copper vessels always clean is generally acknowledged; but it may not perhaps be so generally known, that fat and oily substances, and vegetable acids, do not attack copper while *hot*; and, therefore, that if no liquid be ever suffered to grow *cold* in copper vessels, those utensils may be used for every culinary purpose, with perfect safety.

Dr. Johnstone relates the shocking case of three men who died, after excruciating sufferings, in consequence of eating some victuals prepared in an unclean copper on board the Cyclops frigate.—Thirty-three other men became ill, and were put upon the sick-list, at the same time, and from the same cause.

Dr. Percival gives an account of a young lady who amused herself, while her hair was dressing, with eating samphire pickle impregnated with copper. She soon complained of pain in the stomach, and in five days vomiting commenced, which was incessant for two days. After this her stomach became prodigiously distended; and in nine days after eating the pickle, death relieved her from her sufferings.

*To prevent Lamps from being pernicious to Asthmatic Persons, or others, liable to complaints of the Chest.*

Let a sponge, three or four inches in diameter, be moistened with pure water, and in that state be suspended by a string or wire, exactly over the flame of the lamp, at the distance of a few inches; this substance will absorb all the smoke emitted during the evening, or night, after which it should be rinsed in warm water, by which means it will be again rendered fit for use.

*Paste or Food for Singing Birds, superior to the German Paste in common Use.*

Well mix, or knead together, three pounds of split peas, ground or beat to flour, one pound and a half

each of fine crumbs of bread and coarse sugar, the fresh yolks of six raw eggs, and six ounces of unsalted butter. Put about a third part of the mixture, at a time, in a frying pan, over a gentle fire, and continually stir it till it be a little browned, but by no means burnt. When the other two parts are thus done, and all are become cold, add to the entire quantity six ounces of maw seed, with six pounds of good bruised hemp seeds separated from the husks. Mix the whole well together, and it will be found an excellent food for thrushes, red robins, larks, linnets, canary birds, finches of the different sorts, and most other singing birds, admirably preserving them in song and feather.

*To preserve Pencil and Chalk Drawings.*

1st, Get a pan, or tub, sufficiently spacious to admit the drawing horizontally; fill it with clean water, and run the drawing through in that direction; then lay it on something flat to dry. This will take off the loose lead.

2dly, Fill the same vessel a second time, with rather more than one-third new milk, and the remaining part clean water, through which run the drawing again horizontally, and leave it to dry as before.

Do not lay the drawing, while wet, on any coloured wood, such as mahogany, &c. which will stain the paper in streaks.

Should milk be scarce, you may mix a little (in the proportions above-mentioned), in a teacup, and venture to run the drawing lightly over with a camel-hair pencil, the water having already taken off the superfluous lead, and, in some degree, fixed the other: but be particularly light with the pencil, never touching the drawing twice in the same place.

*Method of setting Pencil Drawings.*

A solution of alum water, in which the drawing is to be dipped) not washed on with a brush, as it would smear) will answer the purpose extremely well.

*Art of dyeing or staining Leather Gloves, to resemble the beautiful York Tan, Limerick Dye, &c.*

These different pleasing hues of yellow, brown, or tan colour, are readily imparted to leather gloves by the following simple process: Steep saffron in boiling hot soft water for about twelve hours; then, having slightly sewed up the tops of the gloves, to prevent the dye from staining the insides, wet them over with a sponge or soft brush dipped into the liquid. The quantity of saffron, as well as of water, will of course depend on how much dye may be wanted; and their relative proportions, on the depth of colour required. A common teacup will contain sufficient in quantity for a single pair of gloves.

*To stain Wood a fine Black.*

Drop a little oil of vitriol into a small quantity of water, rub the same on your wood, then hold it to the fire until it becomes a fine black, and, when polished, it will be exceedingly beautiful.

*To stain Wood a beautiful Red or Mahogany Colour.*

Place a square piece of plane-tree wood, a line in thickness, into pounded dragon's blood, from the Canaries, mixed with oil of turpentine, over the fire, in a glass vessel, the wood will slowly assume the colour, even before the spirit has volatilised. After more than an hour take the vessel from the fire, and let it stand the whole night, when the wood will appear as mahogany colour, not merely on the surface, but also in the interior parts. The denser fibres will be somewhat less coloured; but this, instead of injuring the beauty of the wood, will rather add to it. The red dye can be made stronger or weaker, by taking a greater or less quantity of dragon's blood, and by a greater or less degree of digestion and boiling. The wood of the plane-tree is best for this purpose, because it can be easily sawn and polished; because it has a white colour; is neither too hard nor too soft; has beautiful white spots with veins that cross each other; and be-



cause artists, who make inlaid works, have long attempted to colour it by staining. The wood, when stained, can very easily be freed from the dragon's blood adhering to it, by means of rectified spirits of wine. The spirit of turpentine makes the wood more compact, and renders it more susceptible of a fine polish.

*To make Nankeen Dye.*

Boil equal parts of arnotto and common potash in water, till the whole are dissolved. This will produce the *pale reddish buff* so much in use, and sold under the name of *Nankeen Dye*.

*To dye Cotton a fine Buff Colour.*

Let the twist or yarn be boiled in pure water, to cleanse it; then wring it, run it through a dilute solution of iron in the vegetable acid, which printers call *iron liquor*; wring, and run it through lime water, to raise it; wring it again, and run it through a solution of starch and water; then wring it once more, and dry, wind, warp, and weave it for use.

*Method of extinguishing Fires in Chimnies.*

Stop with a wet blanket the upper orifice of the tunnel; but the surest and readiest method is to apply the blanket either to the throat of the chimney, or over the whole front of the fire-place. If there happens to be a chimney board or a register, nothing can be so effectual as to apply them immediately: and having by that means stopped the draught of air from below, the burning soot will be put out as readily and as completely as a candle is put out by an extinguisher, which acts exactly upon the same principle.

*Method to escape from Fire.*

The following simple machine ought always to be kept in an upper apartment. It is nothing more than a shilling or eighteen-penny rope, one end of which should always be made fast to something in the chamber, and at the other end should be a noose to let

down children or infirm persons, in case of fire. Along the rope there should be several knots, to serve as resting places for the hands and feet of the person who drops down by it. No family occupying high houses should ever be without a contrivance of this kind.

*Hint respecting Women's and Children's Clothes catching Fire.*

The females and children in every family should be particularly told and shewn, that flame always tends upwards, and, consequently, that as long as they continue erect or in an upright posture, while their clothes are burning, the fire generally beginning at the lower part of the dress, the flames meeting additional fuel, as they rise, become more powerful in proportion; whereby the neck and head, being more exposed than other parts to the intense and concentrated heat, must necessarily be most injured. In a case of this kind, where the sufferer happens to be alone, and cannot extinguish the flames by *instantly throwing the clothes over the head, and rolling or lying upon them*, she may still avoid great agony, and save her life, *by throwing herself at full length on the floor, and rolling herself thereon*. This method may not extinguish the flame, but to a certainty will retard its progress, prevent fatal injury to the neck and head, and afford opportunity for assistance. A carpet or hearth-rug instantly lapped round the head and body is almost a certain preventive of danger.

*Valuable concise Rules for preserving Health in Winter.*

Keep the feet from wet, and the head well defended when in bed; avoid too plentiful meals; drink moderately warm and generous, but not inflaming liquors; go not abroad without breakfast. Shun the night air as you would the plague; and let your houses be kept from damps by warm fires. By observing these few and simple rules, better health may be expected than from the use of the most powerful medicines.

*Cautions in visiting Sick Rooms.*

Never venture into a sick room if you are in a violent perspiration (if circumstances require your continuance there for any time), for the moment your body becomes cold, it is in a state likely to absorb the infection, and give you the disease. Nor visit a sick person (especially if the complaint be of a contagious nature) with an *empty stomach*; as this disposes the system more readily to receive the contagion. In attending a sick person place yourself where the air passes from the door or window to the bed of the diseased, not betwixt the diseased person and any fire that is in the room, as the heat of the fire will draw the infectious vapour in that direction, and you would run much danger from breathing in it.

*Preventive of autumnal Rheumatisms.*

For the sake of bright and polished stoves, do not, when the weather is cold, refrain from making fires. There is not a more useful document for health to the inhabitants of this climate, than "Follow your feelings."

*To promote Sleep.*

No fire, candle, rush-light, or lamp, should be kept burning, during the night, in a bed-room, for it not only vitiates the air in a very considerable degree, but also disturbs and prevents the rest of those whose sleep is uneasy, particularly the aged. In a dark apartment, sleep generally comes on without much invitation; whereas, any light in the apartment stimulates the brain, and consequently the whole nervous system, and dispels any tendency to repose.

*General Rules for the Choice of Spectacles, and for the Preservation of the Sight.*

The most general, and perhaps the best rule that can be given, to those who are in want of assistance

from glasses, in order so to choose their spectacles that they may suit the state of their eyes, is to prefer those which shew objects nearest their natural state, neither enlarged nor diminished, the glasses being near the eye, and that give a blackness and distinctness to the letters of a book, neither straining the eye, nor causing any unnatural exertion of the pupil. For no spectacles can be said to be properly accommodated to the eyes, which do not procure them ease and rest; if they fatigue the eyes, we may safely conclude, either that we have no occasion for them, or that they are ill made, or not proportioned to our sight.

Though in the choice of spectacles, every one must finally determine for himself, which are the glasses through which he obtains the most distinct vision; yet some confidence should be placed in the judgment of the artist of whom they are purchased, and some attention paid to his directions. By trying many spectacles, the eye is fatigued, as the pupil varies in size with every different glass, and the eye endeavours to accommodate itself to every change that is produced. Hence, the purchaser often fixes upon a pair of spectacles not the best adapted to his sight, but those which seem to relieve him most, while his eyes are in a forced and unnatural state, and, consequently, when he gets home, and they are returned to their natural state, he finds what he has chosen fatiguing and injurious to his sight.

#### *Of Preservers, and Rules for the Preservation of Sight.*

Though it may be impossible to prevent the absolute decay of sight, whether arising from age, partial disease, or illness, yet, by prudence and good management, its natural failure may certainly be retarded, and the general habits of the eyes strengthened, which good purposes will be promoted by a proper attention to the following maxims:—

1. Never to sit for any length of time in absolute gloom, or exposed to a blaze of light. The reasons on which this rule is founded, prove the impropriety of

going hastily from one extreme to the other, whether of darkness or of light, and shew us that a southern aspect is improper for those whose sight is weak and tender.

2. To avoid reading small print.

3. Not to read in the dark; nor, if the eyes be disordered, by candle-light. Happy those who learn this lesson betimes, and begin to preserve their sight before they are reminded by pain of the necessity of sparing them. The frivolous attention to a quarter of an hour in the evening, has cost numbers the perfect and comfortable use of their eyes for many years; the mischief is effected imperceptibly, the consequences are inevitable.

4. The eye should not be permitted to dwell on glaring objects, more particularly on first waking in a morning; the sun should not, of course, be suffered to shine into the room at that time, and a moderate quantity of light only be admitted. It is easy to see that, for the same reasons, the furniture of a bed should be neither altogether of a white or red colour: indeed, those whose eyes are weak, would find considerable advantage in having green for the furniture of their bed-chamber. Nature confirms the propriety of the advice given in this rule; for the light of the day comes on by slow degrees, and green is the universal colour she presents to our eyes.

5. The long-sighted should accustom themselves to read with rather less light, and somewhat nearer to the eye than what they naturally like, while those that are short-sighted should rather use themselves to read with the book as far off as possible; by this means both would improve and strengthen their sight; while a contrary course will increase its natural imperfections.

There is nothing which preserves the sight longer than always using, both in reading and writing, that moderate degree of light which is best suited to the eye; too little strains them, too great a quantity dazzles and confounds them. The eyes are less hurt by the want of light than by the excess of it; too little

light never does any harm, unless they are strained by efforts to see objects to which the degree of light is inadequate; but too great a quantity has, by its own power, destroyed the sight. Thus many have brought on themselves a cataract, by frequently looking at the sun, or a fire: others have lost their sight by being brought too suddenly from an extreme of darkness into the blaze of day. How dangerous the looking on bright luminous objects is to the sight, is evident from its effects in those countries which are covered the greater part of the year with snow, where blindness is exceeding frequent, and where the traveller is obliged to cover his eyes with crape, to prevent the dangerous and often sudden effects of too much light; even the untutored savage tries to avoid the danger, by framing a little wooden case for his eyes, with only two narrow slits. A momentary gaze at the sun will, for a time, unfit the eyes for vision, and render them insensible to impressions of a milder nature.

The following cases, from a small tract on the "*Fabric of the Eye*," are so applicable to the present article, as to want no apology for their insertion here, though, if any were necessary, the use they will probably be of to those whose complaints arise from the same or similar causes would, I presume, be more than sufficient:

"A lady from the country, coming to reside in St. James's Square, was afflicted with a pain in her eye, and a decay in her sight. She could not look upon the stones, when the sun was upon them, without great pain. This, which she thought was one of the symptoms of her disorder, was the real cause of it. Her eyes, which had been accustomed to the verdure of the country and the green of the pasture grounds before her house, could not bear the silent and unnatural glare of light reflected from the stones; she was advised to place a number of small orange trees in the windows, so that their tops might hide the pavement, and be in a line with the grass. She recovered, by this simple change in the light, without the assistance

of any medicine; though her eyes were before on the verge of little less than blindness."

A gentleman of the law had his lodgings in Pall Mall, on the north side, his front windows were exposed to the full noon sun, while the back room, having no opening but into a small close yard, surrounded with high walls, was very dark; he wrote in the back room, and used to come from that into the front room to breakfast, &c. His sight grew weak, and he had a constant pain in the balls of his eyes; he tried visual glasses, and spoke with oculists, equally in vain. Being soon convinced, that the coming suddenly out of a dusky study, into the full blaze of sunshine, and that very often in the day, had been the real cause of his disorder, he took new lodgings, by which, and forbearing to write by candle-light, he was very soon cured.

Blindness, or, at least, miserable weakness of sight, is often brought on by these unsuspected causes. Those who have weak eyes should therefore be particularly attentive to such circumstances, since prevention is easy, but the cure may be difficult and sometimes impracticable.

When the eye sensibly flattens, all delay is dangerous; and the longer those, who feel the want of assistance, defer the use of spectacles, the more they will increase the failure of the eye; there are too many who procrastinate the use of them, till at last they are obliged to use glasses of ten or twelve inches focus, instead of those of thirty-six or forty, which would otherwise have suited them; thus preferring a real evil to avoid one that is imaginary. Mr. Thomin mentions several deplorable cases of this kind, particularly one of a lady, who through false shame had abstained from wearing spectacles so long a time, that at last it was impossible to suit her, but with those adapted to eyes that have been couched. Whereas the instances are numerous of those who, by using glasses of a long focus at the first approaches of long-sightedness, have brought back their eyes to their na-

tural sight, and been able to lay aside their spectacles for years.

*Comfort for those nearly Blind.*

Inscriptions on dark blue-glazed paper, written with white ink, have been found very legible by persons afflicted with bad eyes, who have had many things written in a strong plain hand for that purpose. The ink is made with gum water and flake white, finely powdered; it must be often shaken, even whilst you are writing, as the flake white very soon subsides. A common pen will do very well for the writing. A bright yellow, or dark green paper, is likewise very easily read.

*To cure a Bruise in the Eye.*

Take conserve of red roses, and also a rotten apple, put them in a fold of thin cambric, apply it to the eye, and it will draw the bruise out.

*To prevent the Effects of Poison of Lead on Painters, Glaziers, &c.*

The physicians and surgeons of the Bath Hospital have ordered the following cautions to be made public, to be observed particularly by printers or compositors, plumbers, glaziers, painters, and other artificers.

To maintain the strictest temperance respecting distilled spirits, which had better be altogether forborne. To pay the strictest attention to cleanliness; and never, when it can be avoided, to daub their hands with paint; and, particularly, never to eat their meals, or go to rest, without washing their hands and face. Not to eat or drink in the room or place wherein they work, and much less to suffer any food or drink to remain exposed to the fumes or dust of the metal in the rooms or warehouses. As the clothes of persons in this line (painters particularly) are generally observed to be much soiled with the colours they use, it is recommended to them to perform their work in frocks of ticking, which may be frequently washed, and conveniently laid aside, when the workmen go to



their meals, and again put on when they resume their work. Every business which can, in these branches, should be performed with gloves on the hands; and woollen or worsted gloves are recommended, as they may be often washed, as they should always be after being soiled with paint, or even by much rubbing against the metal. Caution is necessary in mixing, or even in unpacking the dry colours, that the fine powder does not get into their mouths, or be drawn in by their breath. A crape covering over the face might be of service; but care should be taken to turn always the same side towards the face, and to clean or wash it frequently. All artificers should avoid touching lead when hot; and this caution is especially necessary for printers or compositors, who have often lost the use of their limbs by handling the types when drying by the fire, after being washed. Glaziers putty should never be made or moulded by the hand. An iron pestle and mortar would work the ingredients together, at least equally well, and without hazard.

*To prevent the baneful Effects of burning Charcoal.*

Set an uncovered vessel, filled with boiling water, over the pan containing the charcoal, the vapour of which will counteract the deleterious fumes, and while it keeps boiling will make charcoal as safe as any other fuel.

*To prevent the Mischief arising from the Bite of a Mad Dog.*

Where the excision of the part bitten can be immediately performed, it is the best preventive of danger, or where the part can be burnt out by the application of a red hot iron, little danger is likely to happen. Nothing else is at all to be depended on.

*To prevent Death from the Bite of venomous Animals.*

From observations made by Dr. Bancroft, it is found, that in South America, where the most venomous serpents abound, that a very tight ligature, instantly made after the bite between the part bitten and the

trunk of the body, will prevent immediate danger, and allow time for proper means of remedy, either by excision of the whole joint, just above the ligature, or by topical applications upon the part bitten.

For instance, if the bite should be upon the end of the finger, a tight ligature of small cord should immediately be made beyond the next joint of the finger.

If the bite is on any part of the hand, the ligature should be made above the wrist by means of a garter or cord, lapped several times round the arm, and rendered as tight as possible by a small stick thrust betwixt the folds of the cord or garter, and twisted round very hard, to prevent the circulation of the blood betwixt the part bitten and the other part of the body. Ligatures of the same kind, applied by any one present, or the man himself, will frequently save a person's life, where, by accident, an artery in any of the limbs is wounded, and the person would otherwise bleed to death before regular surgical assistance could be given.

*Method of causing Children to cut their Teeth easily.*

Feed them with an ivory spoon and boat, to be made thick, round, and smooth at the edges; ivory being of the same hardness and texture as the jaws and tender teeth, the gums are not hurt or injured, but when they are thus pressed facilitate the teeth in their progress; whereas the silver implements, being of a hard texture, and the edges made thin, bruise and wound the gums, and make a hard seam; so that the teeth cannot make their way direct, and if they do cut, come irregularly; so that the operation of lancing is frequently absolutely necessary, which of course must prejudice the teeth, as some are exposed before the time they are fit to cut.

By this method, fevers, convulsions, &c. owing to the teeth being not able to find their way through the hard seam, may be prevented. It must be often observed, that children cry much when feeding, as if ill, or disgusted with their food, whereas it is frequently owing to quite the contrary; for, being hungry, and

over eager to take their food, they press hard, through eagerness, on the boat and spoon, which, being sharp, bruises and cuts the gums, and consequently causes great pain, which by the ivory implements will be prevented. Those who cannot afford ivory may have horn or wood, or even pewter is greatly preferable to silver, provided the edges are made thick, round, and smooth. The wooden sort, unless they are kept very sweet and clean, on that very account, are the least eligible, and should be made, however, of box, or such hard and close textured wood as is the least liable to be tainted by the milky food.

*Rules for the Preservation of the Teeth and Gums.*

The teeth are bones, thinly covered over with a fine enamel, and this enamel is more or less substantial in different persons. Whenever this enamel is worn through by too coarse a powder, or too frequently cleaning the teeth, or eaten through by a scorbutic humour in the gums, the tooth cannot remain long sound, any more than a filbert kernel can, when it has been penetrated by a worm.

The teeth, therefore, are to be cleaned, but with great precaution, for if you wear the enamel off faster by cleaning the outside than nature supplies it within, your teeth will suffer more by this method than perhaps by a total neglect. A butcher's skewer, or the wood with which they are made, must be bruised and bit at the end, till with a little use it will become the softest and best brush for this purpose, and in general you must clean your teeth with this brush alone, without any powder whatever; and once in a fortnight, or oftener, dip your skewer-brush into a few grains of gunpowder, breaking them first with the brush, and this will remove every spot and blemish, and give your teeth an inconceivable whiteness. It is almost needless to say that the mouth must be well washed after this operation, for, besides the necessity of so doing, the saltpetre, &c. used in the composition of gunpowder, would, if it remains, be injurious to the gums, &c.

but has not, nor can have, any bad effect in so short a time.

It is necessary to observe, that very near the gums of people, whose teeth are otherwise good, there is apt to grow a false kind of enamel, both within and without, and this false enamel or tartar, if neglected, pushes the gums higher and higher, till it leaves the fangs of the teeth quite bare, above the true enamel, so that sound teeth are destroyed, because the gum has forsaken that part which is not sheathed and protected in consequence of such neglect. This false enamel must therefore be carefully scaled off, for the gum will no more grow over the least particle of this enamel, than the flesh will heal over the point of a thorn.

#### *Tooth Powder.*

To one ounce of fine powder of bark, and one ounce of gum myrrh, add three-fourths of an ounce of bole armenic, mix these ingredients well together, and they will produce an excellent tooth powder, valuable in itself, and highly approved of by many gentlemen of the faculty.

#### *Easy and almost instantaneous Cure for the Ague.*

When the fit is on, take a new-laid egg, in a glass of brandy, and go to bed immediately.

This very simple recipe has cured a great many, after more celebrated preparations have proved unsuccessful.

#### *M. Homassel's Account of his Cure for Burns or Scalds.*

Take half a pound of alum in powder, dissolve it in a quart of water; bathe the burn or scald with a linen rag wet in this mixture; then bind the wet rag thereon with a slip of linen, and moisten the bandage with the alum water frequently, without removing it, in the course of two or three days. He relates that one of his workmen, who fell into a copper of boiling liquor, where he remained three minutes before taken out, was immediately put into a tub containing a saturated

solution of alum in water, where he was kept two hours; his sores were then dressed with cloths and bandages, wet in the above mixture, and kept constantly moistened for twenty-four hours, and that in a few days he was able to return to business.

*Remedy for Burns.*

A little spirit of turpentine, applied to recent burns, will mitigate the pain, if not wholly remove it.

*Efficacy of Vinegar in Curing Burns and Scalds.*

The application of vinegar to burns and scalds is to be strongly recommended. It possesses active powers, and is a great antiseptic and corrector of putrescence and mortification. The progressive tendency of burns of the unfavourable kind, or ill-treated, is to putrescence and mortification. Where the outward skin is not broken, it may be freely used every hour or two: where the skin is broken, and if it gives pain, it must be gently used. But equal parts of vinegar and water, in a tepid state, used freely every three or four hours, are generally the best application, and the best rule to be directed by.

House-leek, either applied by itself, or mixed with cream, gives present relief in burns, and other external inflammations.

*Porter Plaster for Bruises.*

This *simple, singular, and safe* remedy for bruises, is nothing more than a gallon of porter simmered in an earthen vessel, till, when cool, it will be of the consistence of a plaster. This preparation was spread on an old glove, and applied round the ankle of a coachman, who was thrown off his box, and miserably bruised. In three days it so effectually performed a cure, that *coachee* was enabled to remount his box, perfectly relieved from all swelling and pain.

*For a Pain in the Ear.*

Oil of sweet almonds two drachms, and oil of amber

four drops; apply four drops of this mixture, when in pain, to the part affected.

*For Chilblains.*

Soak them in warm bran and water, then rub them well with mustard-seed flour; but it will be better if they are done before they break.

*To prevent Corns from growing on the Feet.*

Easy shoes; frequently bathing the feet in lukewarm water, with a little salt or pot-ashes dissolved in it.

The corn itself will be completely destroyed by rubbing it daily with a little caustic solution of potash, till a soft and flexible skin is formed.

*Cure for Warts.*

The milky juice of the stalks of spurge, or of the common fig leaf, by persevering application, will, to a certainty, soon remove them.

*Court Plaster.*

Take of isinglass, half an ounce; Turlington's (or Friar's balsam,) a' drachm; melt the isinglass in an ounce of water, and boil the solution till a great part of the water is consumed; then add gradually to it the balsam, stirring them well together. After the mixture has continued a short time on the fire, take the vessel off, and spread the extended silk with it, while it is yet fluid with heat, using a brush for spreading it.

*Certain Cure for the Cramp.*

An effectual preventive for the cramp in the calves of the legs, which is a most grievous pain, is to stretch out the heel of the leg as far as possible, at the same time drawing up the toes towards the body. This will frequently stop a fit of the cramp after it has commenced; and a person will, after a few times, be able, in general, to prevent the fit coming on, though its approach be between sleeping and waking. Persons

subject to this complaint should have a board fixed at the bottom of the bed, against which the foot should be pressed when the pain commences.

*To alleviate the Pain occasioned by the Sting of Gnats.*

The disagreeable itching occasioned by the sting of these insects may be removed by volatile alkali, or immediately rubbing and washing the part affected with cold water.

At night, to rub with fuller's earth and water lessens the inflammation.

*To cure the Sting of a Wasp or Bee.*

To the part affected, apply oil of tartar, or solution of potash, and it will give instant ease; as also well bruised mallows.

*To prevent Sea Sickness.*

Drop a few drops of vitriolic æther upon loaf sugar, and let it dissolve in your mouth; or drink a few drops of æther, added to a solution of sugar, in water, to prevent its immediate evaporation.

*Remedy for a Sore Throat.*

Take rosemary tops, about a handful, put them into a bason, and pour a pint of boiling hot verjuice upon it; then cover it over with a tin funnel, the broad side downwards, and the steam will come through the nozzle of the funnel; then hold your mouth over the steam till it is gone down your throat.

N. B. Be very careful that you do not put your mouth too close to the funnel, as it may scald it, but let the steam go down your throat as much as possible, and repeat it as often as necessary.

*A common Drink for a Sore Throat.*

Take two ounces of Turkey figs, and the like quantity of raisins of the sun, and cut them small; two ounces of French or pearl barley, boiled in three pints of spring water till it comes to a quart, and then strain

through a sieve. To be taken warm. Boil it slowly over a gentle fire.

*Gargle for a Sore Throat.*

Take half a pound of Turkey figs, put them into a quart of spring water, and let them simmer over a slow fire till better than one-half is wasted; in the mean time, take a large lemon, cut it in slices, and between every slice put some brown sugar-candy, and let it stand before the fire to roast; then strain the figs, and squeeze them through a coarse cloth, and put the juice of the lemon into it.

N. B. Gargle the throat with it warm, and the oftener the better.

*A Receipt for a Cough.*

Take a glass of spring water and put into it a spoonful of the syrup of horehound, and mix with it nine or ten drops of the spirit of sulphur.

*An excellent Styptic.*

The outside woof of silk-worms has been tried with great success by several people, more especially by a lady, who, in mending a pen, cut her thumb to the bone, and through part of the nail; it bled profusely; but by trying this styptic, and binding up the wound, the hemorrhage stopped, and the wound healed in three days.

*Infallible Remedy for stopping Bleeding of the Nose.*

One ounce of sugar of lead, and half an ounce of green vitriol, to be triturated in a glass mortar; add to these half a pint of spirits of wine. Of this composition, young people, from ten to twelve years of age, are to take ten or twelve drops; patients under twenty years, fourteen or fifteen drops; and grown persons, twenty drops, four times each, in a spoonful of wine or brandy. Some very interesting trials, in the most obstinate cases, have been made with this mixture, with the greatest success.

*Remark.*—No salt of lead should be taken *internally*



without medical advice. It is a powerful drug; that is, if the proper precautions or proportions are neglected or exceeded, it is a strong poison. The green vitriol can have no other effect than to decompose part of the sugar or acetite of lead; that is, to convert the acetite, in part, into sulphat of lead, which is insoluble; and nearly all the green vitriol, or sulphat of iron, into acetite of iron.

*For curing Worms in the Human Body.*

Take senna leaves, well bruised, half a pound; olive oil, twelve ounces; digested together in a sand heat four or five days; then, by a strong expression, force the oil from the fæces, which reserve by itself.

N. B.—In the most obstinate worm case, which eludes the force of mercurials, and baffles the efforts of the most famous specifics, this successfully kills worms, grubs, and ascarides (which last kind cause extreme itching), and by stools expels them.

Dose:—one spoonful, fasting, and persevere in it.

*Observations on Lecches, and their Use.*

The general demand for these useful reptiles, and the high price at which they are now sold, induces us to give some particulars on taking, preserving, and applying them, from a person who has attended to this business.

The large brown leech is the only kind in use; they are in general from two inches to six, though they are capable of much greater extension and contraction; sometimes they are seen darting through the water with great swiftness, at which time they are very long, at other times they will contract themselves into a form almost round. They are much rounder in body than the horse leech (which, contrary to common report, will not fasten to the human body,) with a degree of taper towards each end. The colour is black, and brown stripes on their backs; the belly is covered with dark brown, interspersed with light brown spots. The method of catching them usually employed in England, is agitating the waters where they are con-

tained, which occasions them to float upon the surface thereof, when, with a net made for the purpose, they are secured. Other methods are employed, which would be tedious and unnecessary to relate. They are viviparous, bringing forth their young with all their power, capable of acting in every respect in which this animal is distinguished. The time of fecundity is in the months of April and May, the latter end of August and September;—the number of young ones a single leech brings forth in one year can hardly be ascertained, though it is very numerous; for when the leech catchers rob a pond of all large enough for use, if nothing happens to obstruct fecundation, in two years afterwards they will find it largely stored with abundance of fine leeches, and a much increased number of small ones; this is particularly found to be the case, from the method which some country people have adopted to obtain leeches as an exclusive property. In order to this, they make a pond, near their house, about three feet deep, twenty wide, and thirty long; if they cannot conveniently form one with a sandy bottom, they make the pond a little deeper, in which they deposit a few loads of sandy earth. In this pond, when filled with water, they put their leeches about April, and without any further trouble or expence, they obtain, at the proper season, a large supply of leeches.

Leeches may, with care, be preserved healthy and good for years in pans; during the summer season not more than two hundred should be kept together; in winter, double that number may with equal propriety. The vessel they are kept in should be an earthen pan, that will contain about three gallons of water, which should not be more than half filled with water; for I have found, by experience, that it is congenial to their nature to have a place out of the water, which they may retreat to at pleasure; this is proved by their often hanging in clusters round the top of the pan. From May till September their water should be changed, at least, every other day; in winter every fourth day. The best water to keep them in is spring

water, as being least disposed to putrescency. I have of late put a little moss amongst leeches, which practice I would recommend, for they are very much enamoured with it, perhaps from its resembling, in some measure, their native weeds; they creep through it, and by that means clear themselves of slime, which in the warm weather accumulates around them, and, unless removed by timely changes of water, will be productive of disease. During hot weather they should be kept in as cool a place as possible, and in the winter season place them where the water may preserve that degree of warmth it possesses in summer. When you put fresh water to them, during the cold weather, it should be deprived of that intense coldness which it possesses at that season of the year, by warming it in the smallest degree. The leech, as has been before said, feeds upon insects in its native waters, but may be, as above hinted, kept in water only for years, though they dwindle by keeping; they remain healthy, and will take with as much avidity as those recently taken from the waters, provided they are well attended to, with respect to changing their water agreeably to the rules laid down.

The mode which I have found, by copious experience, to be infinitely the best (being attended with quickness, certainty, and efficacy), is as follows: Let the part be first carefully washed clean with warm milk and water; if very dirty and requiring it, a little soap may also be used; when the part is thus washed and wiped dry, rub over the part a little milk, then see that your leech is wiped dry with a smooth cloth, which being done, take it with your fingers by the middle, and apply its mouth to the very spot you wish; you will, perhaps, find it, at first, twist and extend itself in your fingers, and then wish to attach itself to some contrary part; but as repeatedly as it extends itself around, or attempts to fix upon a wrong situation, you must as repeatedly draw it back and re-apply it to the proper part; by so doing you will find it will presently seize the precise spot wished for; when you find this you must not hastily let the leech go, for they

will sometimes seem to seize the part with great avidity, and in a few seconds let go their hold; but when you are convinced the leech has good hold, you may then let go, and leave it to the employment it enjoys.

I here find it necessary to remark, that the small end of the leech is the head, whereas I have repeatedly observed, that the greater part of the people, from the tail of the leech being much broader than the head, mistake the one for the other, and thereby occasion themselves a great deal of fruitless labour. When the animal has fastened himself, he generally expands the tail, and sometimes attaches it very firmly to another part of the skin, but without the least pain to the part; this hold, I have observed, the leech does not quit till it is charged with blood, and then drops off all at once.

I would here observe, that the quantity of blood the leech imbibes, is in general insufficient to answer the purpose: therefore, when the leech comes off, it is necessary to have a bason of warm water, and a sponge or rag, to keep bathing the orifice, in order to encourage the bleeding for an hour or two; if the orifice seem disposed to bleed any longer than wished for, apply a piece of lint, three or four times double, and bandage it up.

#### *To make Ink.*

To three quarts of water add three pints of white wine vinegar; fifteen ounces of blue galls slightly bruised; let these stand near a fire six days; then put in six ounces of green copperas, and seven ounces of gum-arabic finely pounded; permit the whole to remain near a fire six days more, and be frequently stirred up; strain the liquor through a fine cloth, and bottle it up for use.

*Remark.*—The vinegar improves the colour of the ink, but it has the troublesome effect of destroying the pen very quickly. Pronet says, the best ink is made by digesting the infusion of galls in pure water, upon iron. That process certainly makes a very good ink. The proper proportion of gum is of course added.

*Red Ink.*

Take a quarter of a pound of the best Brazil wood, (get it in the log if possible, and rasp or shave it yourself,) one ounce of cream of tartar, and one ounce of alum; boil these ingredients in a quart of clear water till half is consumed, then add to the ink, when filtered hot, one ounce of gum-arabic and one ounce of fine sugar.

*To prevent Ink from moulding.*

Half a dozen cloves, bruised with gum-arabic, are to be put into the bottle. If a very fine ink is wanted, white wine, or vinegar and water, should be used instead of water alone.

*To make portable Balls for removing Spots from Clothes in general.*

Take fullers'-earth, perfectly dried, so that it crumbles into a powder; moisten it with the clear juice of lemons, and add a small quantity of pure pearl ashes; then work and knead the whole carefully together, till it acquires the consistence of a thick elastic paste; form it into convenient small balls, and expose them to the heat of the sun, in which they ought to be completely dried. In this state they are fit for use in the manner following:—First, moisten the spot on your clothes with water, then rub it with the ball just described, and suffer it again to dry in the sun: after having washed the spot with pure water, it will entirely disappear.

*To remove Spots of Grease from Paper.*

Take an equal quantity of roach alum, burnt, and flower of brimstone, finely powdered together; wet the paper a little, and put a small quantity of the powder on the place, rubbing it gently with your finger, and the spot will disappear.

*Substitute for Salt of Sorrel, for removing Ink Spots and Iron-moulds.*

Take six parts of crystals of tartar, in powder, three

parts of alum, likewise pulverized, and use them in the same manner as salt of sorrel.

*Expeditious Method of taking out Stains from Scarlet, or Velvet of any other Colour.*

Take soap wort, bruise it, strain out its juices, and add to it a small quantity of black soap. Wash the stain with this liquor, suffering it to dry between whites, and by this method the spots will in a day or two entirely disappear.

*To take Spots effectually out of Silk, Linen, or Woollen.*

Spirits of turpentine, twelve drops, and the same quantity of spirits of wine; grind these with an ounce of pipe-maker's clay, and rub the spots therewith. You are to wet the composition when you do either silk, linen, or woollen with it; let it remain till dry, then rub it off, and the spot or spots will disappear.

True spirits of salts diluted with water, will remove iron-moulds from linen; and sal-ammoniac, with lime, will take out the stains of wine.

*To take the Stains of Grease from Woollen or Silk.*

Three ounces of spirits of wine, three ounces of French chalk, powdered, and five ounces of pipe-clay. Mix the above ingredients, and make them up in rolls about the length of a finger, and you will find a never-failing remedy for removing grease from woollen or silken goods.

N. B.—It is to be applied by rubbing on the spot either dry or wet, and afterwards brushing the place.

*Easy and safe Method of discharging Grease Spots from Woollen Cloths.*

Fullers'-earth, or tobacco pipe-clay, being put wet on an oil spot absorbs the oil as the water evaporates, and leaves the vegetable or animal fibres of cloth clean, on being beaten or brushed out. When the spot is occasioned by tallow or wax, it is necessary to heat the part cautiously by an iron or the fire, while the cloth is drying. In some kinds of goods, blotting

paper, bran, or raw starch, may be used with advantage.

*To take out Spots of Ink.*

As soon as the accident happens, wet the place, with juice of sorrel or lemon, or with vinegar, and the best hard white soap.

*To take Iron-moulds out of Linen.*

Hold the iron-mould on the cover of a tankard of boiling water, and rub on the spot a little juice of sorrel and a little salt, and when the cloth has thoroughly imbibed the juice, wash it in lee.

*To take out Spots on Silk.*

Rub the spots with spirit of turpentine; this spirit exhaling, carries off with it the oil that causes the spot.

*To remove Spots of Grease from Books and Prints.*

After having gently warmed the paper stained with grease, wax, oil, or any fat body whatever, take out as much as possible of it, by means of blotting paper. Then dip a small brush in the essential oil of well-rectified spirit of turpentine, heated almost to an ebullition (for when cold it acts only very weakly), and draw it gently over both sides of the paper, which must be carefully kept warm. This operation must be repeated as many times as the quantity of the fat body imbibed by the paper, or the thickness of the paper, may render necessary. When the greasy substance is entirely removed; recourse may be had to the following method to restore the paper to its former whiteness, which is not completely restored by the first process. Dip another brush into highly rectified spirit of wine, and draw it, in like manner, over the place which was stained, and particularly round the edges, to remove the border, that would still present a stain. By employing these means, with proper caution, the spot will totally disappear; the paper will resume its original whiteness; and if the process has

been employed on a part written on with common ink, or printed with printer's ink, it will experience no alteration.

*To take Spots out of Cloths, Stuffs, Silk, Cotton, and Linen.*

Take two quarts of spring water, put in it a little fine white pot-ash, about the quantity of a walnut, and a lemon cut in slices; mix these well together, and let it stand for twenty-four hours in the sun; then strain it off, and put the clear liquid up for use. This water takes out all spots, whether pitch, grease, or oil, as well in hats, as cloths and stuffs, silk or cotton, and linen. As soon as the spot is taken out, wash the place with fair water; for cloths of a deep colour, add to a spoonful of the mixture as much fair water as to weaken it.

Grease spots in cloth may be removed by using soap and water with a tooth or nail brush, and afterwards wiping off the lather with the wet corner of a towel. Essence of lemon, or pure spirit of turpentine, will remove pitch from cloth, &c.

In woollen cloth, an easier method is to scrape off the hard tallow with the edge of a tea spoon, then rub the part briskly with a clean woollen rag, shifting the rag as the part becomes dirty; or, place some blotting paper on the spot, and press it with a hot iron, occasionally moving the paper.

*Remedy against the Effects of Ink, when just spilled.*

If the ink be spilled on a ruffle, or apron, &c. while you have it on, let one hold the spotted part between his two hands over a bason and rub it, while another pour water gradually from a decanter upon it, and let a whole pitcher-full be used if necessary; or if the ruffle, apron, &c. be at liberty, let it be dipped into a bason filled with water, and there squeezed and dipped in again, taking care to change the water in abundance every two or three squeezes. If the ink be spilled on a green table carpet, it may immediately be taken out with a tea-spoon so entirely, that scarcely any water



at all shall be wanted afterwards, provided it was only that instant spilled, as the down of the cloth prevents the immediate soaking in of the ink, or of any other liquor (except oil); but if it have lain some time, be the time ever so long, provided the place be still wet, by pouring on it fresh clean water by little and little at a time, and gathering it up again each time with a spoon, pressing hard to squeeze it out of the cloth into the spoon, you will at last bring it to its natural colour, as if no such accident had happened.

*Gold-colour Varnish, or Lacker.*

Take eight ounces of amber, two ounces of lacca; melt them; add eight ounces of drying oil; then add oil of turpentine coloured with gamboge, arnotto, saffron, and dragon's-blood, according to the tinge you want.

*Black Japan.*

Melt eight ounces of amber; melt (separately from the amber) four ounces of asphaltum, and four ounces of rosin: when melted, add eight ounces of boiling oil, and then sixteen ounces of oil of turpentine; then stir in from half an ounce to one ounce lamp-black, and give it another boil or two.

*Common Varnish.*

One pound of rosin, one ounce gum-elemi, eight ounces drying oil, and sixteen ounces oil of turpentine.

*Common Turpentine Varnish*

Is frequently made by dissolving one pound of turpentine, or about ten ounces of rosin, in oil of turpentine alone.

*Varnish for coloured Drawings and Prints.*

Take of Canada balsam one ounce, spirit of turpentine two ounces; mix them together. Before this composition is applied, the drawing or print should be

sized with a solution of isinglass in water; and when dry, apply the varnish with a camel's-hair brush.

*Varnish for Furniture.*

To one part of virgin's white wax add eight parts of oil of petroleum; lay a slight coat of this mixture on the wood with a badger's brush, while a little warm; the oil will then evaporate, and leave a thin coat of wax, which should afterwards be polished with a coarse woollen cloth.

*A Varnish for Toilet Boxes, Cases, Fans, &c.*

Dissolve two ounces of gum-mastic, and eight ounces of gum-sandarac, in a quart of alkohol; then add four ounces of Venice turpentine.

*To make Varnish for Oil Paintings.*

According to the number of your pictures, take the whites of the same number of eggs, and to each picture take the bigness of a hazel-nut of white sugar-candy, dissolved, and mix it with a tea-spoonful of brandy: beat the whites of your eggs to a froth; then let it settle; take the clear, put to it your brandy and sugar, and varnish over your pictures with it; this is much better than any other varnish; as it is easily washed off when your pictures want cleaning again.

*Varnish for Drawings, Prints, &c.*

Boil four ounces of isinglass, in small pieces, in one quart of brandy or spirits of wine, expose it to the air, and when only warm wash over the print or drawing (which should be previously mounted) and let it stand till quite dry; then wash it again at a small distance from the fire, or it will blister, which repeat two or three times; then go twice over with the following white varnish:—Take of gum-sandarac and gum-mastic equal parts; dissolve them in spirits of wine; let them settle two days, then strain through a linen cloth, and pour the clear liquor into a bottle for use.

*Remedies against Fleas.*

Fumigation with brimstone; or the fresh leaves of penny-royal sewed in a bag, and laid in the bed, will have the desired effect.

*Orange Wine.*

Take the expressed juice of eight *Seville* oranges; and, having one gallon of water wherein three pounds of sugar have been boiled, boil the water and sugar for twenty minutes; skim constantly, and when cooled to a proper heat for fermentation, add the juice, and the outer rind of the fruit shaved off. Put all into a barrel, stir it frequently for two or three days, and then closely bung it for six months before it is bottled.

*Corns and Warts.*

Apply soft brown paper moistened with spittle. A few dressings will remove them.

*To prevent Paper from Sinking.*

If the paper used in superior editions of books, and which sinks so as to prevent its being written on, be dipped in alum water, it may be written on. This practice was adopted by Peiresc.

*To harden Plaster of Paris Casts.*

Wash them well with a sponge dipped in alum-water.

*To change Hair to a deep Brown.*

A solution of the silver caustic in water is the foundation of all the nostrums for this purpose. It must be well diluted before used.

*Against Burns or Scalds.*

Plunge the part scalded into cold water as soon as possible. Wet it with linen steeped in rectified spirit or common brandy. Poultices and oily applications are to be avoided.

*A Corn Plaster.*

One ounce of naval pitch, half an ounce of galbanum, dissolved in vinegar, one scruple of ammonia, and one drachm and a half of diachylon, mixed together.

*For preserving the Nails.*

One ounce of oil of bitter almonds; one drachm of oil of tartar per deliquium; one ounce of prepared crabs-eyes. Mix up with essence of lemon to scent it.

La Forest recommends rubbing the nails with lemon as a detergent.

*For taking away superfluous Hair.*

Quicksilver, two ounces; yellow orpiment, one ounce; starch, one ounce; litharge, one ounce; sift them through silk, and dilute them with soap and water till they become a paste. Anoint the part, and let it dry for five minutes; then scratch off the hair with the nail. Wash immediately in warm water.

*To discharge Grease from Leather.*

The white of an egg applied to the spot, and dried in the sun; or, to two table-spoonfuls of spirit of turpentine, add half an ounce of mealy potatoes, with some of the best Durham mustard. Apply this mixture to the spot, and rub it off when dry. A little vinegar added, revives, and is perhaps more efficacious.

*To prevent Wounds from mortifying.*

Sprinkle sugar on them. The Turks wash fresh wounds with wine, and sprinkle sugar on them. Obsolete ulcers may be cured with sugar dissolved in a strong decoction of walnut leaves.

*To discharge Grease from Paper.*

Burn bones of sheep; with the powder rub both sides of the spot; and, putting white pieces of paper on each side, lay the whole in a press. Repeat this process till the spot disappears.

*To prevent Brass Vessels from contracting Verdigris, after being used.*

Instead of wiping them dry, it has been found, that by constantly immersing them in water, they are kept perfectly innoxious, and will remain for years, fully as clean and nearly as bright as when they first came out of the hands of the workmen.

*Improved Mode of preserving Flowers.*

Take three pounds of roses, and rub them for two or three minutes with one pound of common salt. The flowers, being bruised by the friction of the salt, yield their juice, so that a paste is immediately formed, which may be put in an earthen jar, or in a barrel, till filled, by repeating the same process. Then close it, and keep it in a cool place, till wanted. When required to be distilled, this aromatic paste is to be put into the body of the still, with twice its weight of water. Any season of the year will do for this operation. Hence it arises, that all plants being *well salted*, need only to be distilled when wanted, and may thus be used while all their medical virtues are in perfection.

*Chapped or Sore Lips*

May be healed by the frequent application of honey-water, and protecting them from the influence of cold air.

*To promote the Growth of Hair.*

Mix equal parts of olive oil and spirits of rosemary, and add a few drops of oil of nutmeg. If the hair be rubbed every night with a little of this lineament, and the proportion be very gradually augmented, it will answer every purpose of increasing the growth of hair, much more effectually than can be attained by any of the boasting empirical preparations which are imposed on the credulous purchaser.

*To judge of the Weather.*

If a person intends to ride any where in winter, and

suspects it will rain, he may know by the following observation eight hours before the rain comes on; and so resolve to take a great coat with him, or otherwise escape it, viz. Let him observe the top of the mercury in the tube of a barometer, and if rain be about to come, it will be indented or concave, *otherwise*, convex or protuberant. But as the barometer is sometimes deceitful, the point from which the wind blows, and the appearance of the day are more certain.

*Distemper in Dogs.*

Dr. Blaine has described the disease, called the Distemper in Dogs, with accuracy, and his medicines, in general, are successful: but a gentleman had administered Dr. Blaine's medicines to a favourite pointer, in the disease called *The Distemper*, but with no avail; the unvarying symptoms had come on, when the poor animal crawled into the field, and fell among some grass, attempting, but in vain, to eat it. The gentleman followed this suggestion of nature, and ordered a handful of grass to be cut in shreds of about half an inch long, and when mixed with butter, to be put down the animal's throat; the dose was repeated three times in every twenty-four hours, and a visible amendment almost immediately took place, which terminated in recovery.

*To know whether a Dog is mad or not.*

Dogs suspected of being mad are frequently killed, leaving persons bitten in a dreadful uncertainty, whether the dogs were or were not really mad; the following experiment has been supposed conclusive on this head:—rub the mouth, teeth, and gums of the dead dog, if free from blood, with a little roast or boiled meat, and offer this meat, so rubbed, to another dog, who will eat it without reluctance if the dead dog was not mad, but will refuse it, and run away howling from it, if the dead dog was really mad. It may be further satisfaction to the parties concerned, to keep the dog tied up for some days, if he eats the meat so prepared.

*How to cut Box Edgings in Gardens.*

Box edgings should be cut about the beginning of April, or in the end of July. They should, however, be cut once a year, and should be kept two inches in breadth at bottom; being tapered up to a thin edge at top; for nothing looks so ill as a large bushy edging, especially to a narrow walk. The use of edging is to separate the earth from the gravel, and the larger they are allowed to grow, the less effectual they become; getting the more open below, as they advance in height. Such also harbour snails, and other troublesome vermin.

*A sure Method of curing Gravel Walks.*

Three parts pond-water to one of brine, from the salting-tub in a family, poured with a watering pot upon gravel walks, will not only kill the moss upon them, but drive away the worms which make so many holes in them, and also prevent weeds springing up. This a gentleman has lately tried, who has several gravel walks in a grove near his house. Since he moistened his walks with brine, which is now four years ago, they are incommoded neither by moss, weeds, or worms. Every autumn he causes them to be well watered with the brine and pond water, during a whole week, to prevent moss, and a week in the spring, to guard against weeds and worms, besides giving them a sprinkling every now and then in summer season, when they seem to want it.

*When to plant Annual and Perennial Flowers.*

Many kinds of annuals and perennials, sown in March and the beginning of April, will be fit for transplanting about the end of May, and may either be planted in patches about borders, or in beds, as fancy shall direct. Of these, the kinds improved by transplanting, are, amaranthuses, China asters, columbines, French and African marigolds, fox-gloves, holly hocks, India pinks, love lies a bleeding, mallows, mignonette, prince's feather, scabious, stocks, sun-flowers, sweet-

williams, wall-flowers, and others. They should be planted out in a showery time, if possible, or otherwise be frequently watered, till they have struck root.

*To remove Herbs and Flowers in the Summer.*

If you have occasion to transplant in the summer season, let it be in the evening after the heat is past, plant and water the same immediately, and there will be no danger from the heat next day; but be careful, in digging up the earth, you do not break any of the young shoots, as the sap will exude out of the same to the great danger of the plants.

*To cure the Disease in Apple Trees.*

Brush off the white down, clear off the red stain underneath it, and anoint the places infected with a liquid mixture of train oil and Scotch snuff.

*To cure the Canker in Trees.*

Cut them off to the quick, and apply a piece of sound bark from any other tree, and bind it on with a flannel roller. Cut off the canker, and a new shoot will grow strong, but in a year or two you will find it cankered.

*A method of curing Fruit Trees infected with an Easterly Blight.*

Where valuable fruit trees are infected with this blight, they may, with little trouble and expence, be in a short time cured, by fumigating them with brimstone strewed on lighted charcoal; this effectually kills it; but the workman must observe to get to windward of the trees, as the fumes, both of brimstone and charcoal, are very offensive and pernicious.

Mr. Miller recommends washing and sprinkling the blighted trees from time to time, with common water (that is, such as hath not had any thing steeped in it), and the sooner that is performed (whenever we apprehend danger) the better; and if the young and tender shoots seem to be much infected, wash them with a woollen cloth so as to clear them, if possible, from all glutinous matter, that their respiration and perspiration may not be obstructed; and if some broad flat



pans, or tubs, are placed near the trees, it will keep their tender parts in a ductile state, and greatly help them; but whenever this operation of washing the trees is performed, it should be early in the day, that the moisture may be exhaled before the cold of the night comes on, especially if the nights are frosty, nor should it be done when the sun shines very hot upon the wall, which would be subject to scorch up the tender blossom.

*Easy Method of producing Mushrooms.*

If the water wherein mushrooms have been steeped or washed, be poured upon an old bed, or if the broken parts of mushrooms be strewed thereon, there will speedily arise great numbers.

*To obtain a good Crop of Onions.*

In order to obtain a good crop of onions, is is proper to sow at different seasons, viz. in light soils, in August, January, or early in February; and in heavy wet soils, in March, or early in April. Onions, however, should not be sown in January, unless the ground be in a dry state, which is not often the case at so early a period of the season; but if so, advantage should be taken of it.

*To make an excellent Smelling Bottle.*

Take an equal quantity of sal-ammoniac and unslaked lime, pound them separate, then mix and put them in a bottle to smell to. Before you put in the above, drop two or three drops of the essence of bergamot into the bottle, then cork it close. A drop or two of ether, added to the same, will greatly improve it.

*To make Milk of Roses.*

To one pint of rose water, add one ounce of oil of almonds, and ten drops of the oil of tartar.

N. B. — Let the oil of tartar be poured in last.

*Wash for the Skin.*

Four ounces of pot-ash, four ounces of rose-water,

two ounces of pure brandy, and two ounces of lemon juice; put all these into two quarts of water, and when you wash, put a table-spoonful or two of the mixture into the bason of water you intend washing in.

*To prevent Beer from growing flat.*

In a cask, containing eighteen gallons of beer, becoming vapid, put a pint of ground malt, suspended in a bag, and close the bung perfectly: the beer will be improved during the whole time of drawing it for use.

*To recover sour Beer.*

When beer is become sour, add thereto some oyster shells, calcined to whiteness, or, in place thereof, a little fine chalk or whiting. Any of these will correct the acidity, and make it brisk and sparkling; but it should not be long kept after such additions, otherwise it will spoil.

*To restore pricked or stale Beer.*

To about a quart of stale beer, put half a tea-spoonful of salt of wormwood; this will restore the beer, and make it sparkle when poured into a glass, like bottled porter.

*To clean Boot Tops, or any Tanned Leather.*

Boil one quart of milk, let it stand till cold; then take one ounce of oil of vitriol; one ounce of spirits of salts; shake them well together; and add one ounce of red lavender. You may put half a pint of vinegar, with the white of an egg beat to a froth.

*To prevent Snow Water or Rain from penetrating the Soles of Shoes or Boots in Winter*

This simple and effectual remedy is nothing more than a little bees'-wax and mutton suet, warmed in a pipkin, until in a liquid state; then rub some of it slightly over the edges of the sole where the stitches are, which will repel the wet, and not in the least prevent the blacking from having the usual effect.

*To keep Moths, Beetles, &c. from Clothes.*

Put a piece of camphor in a linen bag, or some aromatic herbs, in the drawers, among linen or woollen clothes, and neither moth or worm will come near them.

*Composition for restoring Scorched Linen.*

Boil, to a good consistency, in half a pint of vinegar, two ounces of fuller's earth, an ounce of hen's dung, half an ounce of cake soap, and the juice of two onions. Spread this composition over the whole of the damaged part; and, if the scorching were not quite through, and the threads actually consumed, after suffering it to dry on, and letting it receive a subsequent good washing or two, the place will appear full as white and perfect as any other part of the linen.

*Vulgar Error respecting the putting of Spirits into Boots and Shoes to prevent the Effects of Cold.*

The custom of pouring brandy into the boots or shoes, when the feet have got wet, with a view to prevent the effects of cold, is a practice which (though very common) is founded in prejudice and misconception, and often proves fatal, by bringing on inflammation and consequent obstruction in the bowels. This practice is adopted upon the supposition that, because spirits, when swallowed, excite an universal warmth and restore the circulation in the extremities, they must do the same when applied to the extremities themselves. But the reverse happens. Fluids, when evaporating, produce cold; and the lighter or more spirituous the fluid, the more quickly it evaporates, and the greater is the degree of cold generated. This may be proved by a very simple experiment. If one hand be wetted with spirit and the other with water, and both are held up to dry in the air, the hand wetted with spirit will feel infinitely colder than the other; or if the bulbs of two thermometers be so treated, the mercury will be observed to fall much more rapidly and extensively in the one case than in the other.

Whatever danger, therefore, arises from cold or damp feet, it is generally enhanced by the practice alluded to. If such a remedy is to be at all employed, it ought, undoubtedly, to be taken into the stomach.

*To increase the Growth of Hair.*

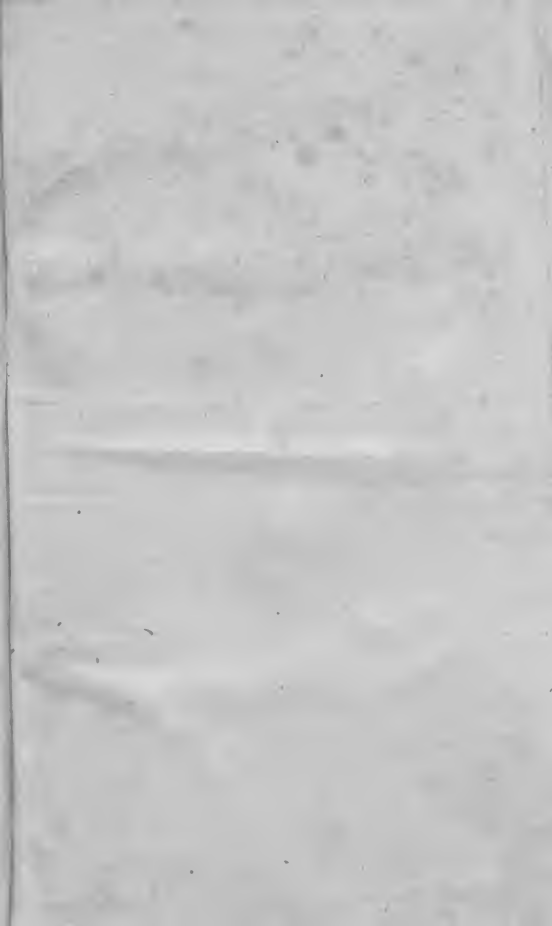
Hartshorn beat small, and mixed with oil, being rubbed upon the head of persons who have lost their hair, will cause it to grow again as at first.

*To destroy Rats and other Vermin.*

Sponge, if cut in small pieces, fried or dipped in honey, and given to vermin, distends their intestines, and effectually destroys them. The addition of a little oil of rhodium will tempt them to eat.

A better method would be to feed them regularly two or three weeks in any apartment which they infest. The hole, by which they enter, being first fitted with a sliding door, to which a long string may be added: any apartment might thus be turned into a gigantic rat-trap.

FINIS.







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